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UK METEOROLOGICAL OFFICE
GLOBAL DATA MONITORING REPORT

January, 1997

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Meteorological Office
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1. Introduction

As the WMO-appointed lead centre for monitoring surface marine data, the U.K. Meteorological Office produces monthly statistics on the quality of these observations received at RSMC Bracknell. This report includes this information along with statistics for most other types of data. The figures and tables contained herein are presented according to the agreed standards for the exchange of monitoring results.

The report is based on data received at the UK Meteorological Office Headquarters, Bracknell in time for inclusion into the appropriate analysis. The evaluation of data quality is based on comparison with the appropriate 6-hour global model forecast (background field). Generally, the background field is of high quality except in data sparse areas, tropical regions and areas close to steep orography where care should be taken in interpreting the statistics shown.

Comments or queries on the report are welcome and should be addressed to:-

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2 Global Data Monitoring Statistics

Ships, Fixed buoys, Platforms and Drifting buoys observations

TABLES 1-2 contain lists of the stations which are considered to have returned suspect observations of pressure, windspeed, wind direction or temperature, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 1 and 2 show 10 degree lat/long box average numbers of SHIP/SYNOP and DRIFTER observations received per day throughout the month at Bracknell and assimilated into model runs. Only data from the main hours of 00 UTC, 06 UTC, 12UTC and 18 UTC are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Synop Observations

Table 3 contains a list of stations which are considered to have returned suspect observations of Pressure during the month. The criteria for quality control are given in the header page. The reporting practice of each station is included in the list of statistics.

At RSMC Bracknell, for synoptic stations at or below a height of 500 metres, reported mean sea-level pressure is used in the statistics. If this is unavailable the mean sea-level pressure is calculated from the reported station-level pressure and temperature.

For synoptic stations above 500 metres, the mean sea-level pressure is calculated from the reported station-level pressure and temperature, or, if these are not available the height of a standard pressure-level (e.g.: 850 hPa or 700 hPa). If neither of these are available, the reported mean sea-level pressure is used.

Some stations vary their reporting practice according to the observation hour (e.g.: some stations in the CIS report both mean sea-level and station-level pressure at 00 & 12 UTC, but only mean sea-level pressure at 06 & 18 UTC). For monitoring purposes, reported mean sea-level pressure is stored separately from that calculated from station-level pressure or height of a standard pressure-level. Only statistics for the preferred method (see above) are presented in this report, and so for certain high-level stations, such as those from the CIS, approximately half of the number of observations actually received will appear in the statistics.

Aircraft observations

TABLE 4 contains a list of statistics calculated from data received from all airline carriers.

Figure 3 shows 10 degree lat/long box average numbers of AIREP/ASDAR reports received per day throughout the month at Bracknell and assimilated into model runs in the layer 70-500 hPa. Observations with a vector wind difference (compared with the model background field) of >60 m s^{-1} have been excluded. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

Figures 4-7 show wind statistics for AIREP/ASDAR in the layer 70-500 hPa. Observations with a vector wind difference > 60 m s^{-1} have been excluded. Statistics have not been calculated for 10 degree lat/long boxes containing <31 observations.

Figure	Parameter
4	Mean wind vectors
5	Mean observation - background wind vector
6	Mean observation-background speed (m s^{-1})
7	RMS observation-background vector (m s^{-1})

Radiosonde Observations

TABLES 5-7 contain lists of the stations which are considered to have returned suspect observations of geopotential height, vector wind or wind direction, as appropriate, during the month. The criteria for quality control are given on the header page for each table.

Figures 8 and 9 show 10 degree lat/long box average numbers of TEMP 500 hPa GEOPOTENTIAL HEIGHT and TEMP/PILOT 300 hPa WIND observations received per day throughout the month at Bracknell and assimilated into model runs. Data from all hours are included. Box average values are plotted as the nearest whole number (values of x.5 are rounded up). Where the average is more than 999, then 999 is plotted. A box with no observations is blank. If the 24 hour average >0 but <0.5, then 0 is plotted.

APPENDIX I shows details of the gross error limits used in TABLES 5 and 6 and the weights used in the RMS values in TABLE 5.

Satellite Observations

Figures 10-24 show satellite wind statistics for all geostationary satellites. All plots other than **AVAILABILITY** show average data where there are > 10 observations in a 10 degree lat/long box.

Figure	Parameter Plotted	Layer (hPa)
10	Availability/average daily number	701-1000
11	Vector mean wind (observed)	701-1000
12	Observation-background vector wind difference	701-1000
13	Mean observation-background speed differences	701-1000
14	RMS observation-background vector difference	701-1000
15	Availability/average daily number	401-700
16	Vector mean wind (observed)	401-700
17	Observation-background vector wind difference	401-700
18	Mean observation-background speed differences	401-700
19	RMS observation-background vector difference	401-700
20	Availability/average daily number	101-400
21	Vector mean wind (observed)	101-400
22	Observation-background vector wind difference	101-400
23	Mean observation-background speed differences	101-400
24	RMS observation-background vector difference	101-400

Figures 25-27 show satellite mean observation-background temperature differences for NOAA-12 soundings at 500 km resolution and figures 28-30 show the same statistics for NOAA-14. Data are plotted where there are > 30 observations in a 10 degree lat/long box.

N.B. 500 km SATEMs are no longer assimilated into the UKMO global Unified Model. Both 500 km and 120 km SATEMs were replaced on 16th April 1996 by 120 km resolution temperature profiles produced locally from the radiances disseminated by NESDIS (from NOAA-12 and NOAA-14).

Figure	Layer (hPa)
25/28	850-1000
26/29	100-300
27/30	30-50

3 Composite Observing Systems for the North Atlantic (COSNA)

This section shows statistics for upper air (radiosonde and aircraft) and surface (drifter) data for the North Atlantic area for data received at Bracknell during the month.

TABLE 8 shows quality statistics for **Mean Sea-level Pressure, Windspeed and Wind Direction** received at Bracknell in DRIFTER code during the month for the area
10°N - 80°N, 85°W - 0°W.

TABLE 9 shows quality statistics for **Temperature and Vector Wind** received at Bracknell from aircraft during the month for the area 40°N - 70°N, 60°W - 0°W.

Table 10 - 13 show quality statistics **(Geopotential Height and Windspeed at 100 and 500 hPa)** for all TEMPSHIPS in the area bounded by 0°N - 90°N, 100°W - 40°E and selected TEMP stations within the same area.

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Revisions

1. May 95 Monitoring statistics for NOAA-11 removed. Figures 25-27 now show data for NOAA-12
2. May 95 Notes giving details of observations included in wind direction statistics clarified and corrected.
3. August 95 Monitoring statistics for NOAA-14 added with figures 28-30.
4. February 96 Monitoring statistics for GOES-7 has been replaced by statistics for GOES-8 and GOES-9.

TABLE 1

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SHIPS, FIXED BUOYS AND PLATFORMS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for ships, fixed buoys and platforms.

Standard of comparison :Background field from Bracknell global model.

Observation times :00, 06, 12, 18 UTC

Elements monitored
:Mean sea level pressure (hPa).
:Wind speed (m s^{-1}).
:Wind direction (Degrees).

Parameters monitored

:NOBS :Number of observations received excluding duplicates.

:NGE :Number of observations with gross errors.

:PGE :Percentage of observations with gross errors.

:SD :SD of difference of observations from background values excluding those with gross errors.

:BIAS :Mean difference of observations from background values excluding those with gross errors.
N.B. a positive bias indicates the observation is veered to the background.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors.

GROSS ERROR LIMIT
:15 hPa (pressure)
:25 m s^{-1} (vector wind)

SELECTION CRITERIA :NOBS ≥ 20 , and one or more of the following:

1.¦bias¦	≥ 4 hPa	(pressure),
	≥ 5 m s^{-1}	(wind speed),
	≥ 30 degrees	(direction).
2.SD	≥ 6 hPa	(pressure),
	≥ 80 degrees	(direction).
3.PGE	≥ 25	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE									
C6FA6	ALL	MSLP	SUR	58	0	0	1.0	-6.4	6.5
C6HD5	ALL	MSLP	SUR	42	0	0	1.9	5.7	6.0
C6IL3	ALL	MSLP	SUR	38	2	5	6.1	3.1	6.8
C6LI6	ALL	MSLP	SUR	75	0	0	1.3	7.3	7.4
ELRE5	ALL	MSLP	SUR	46	0	0	2.6	7.8	8.2
ELRO3	ALL	MSLP	SUR	28	7	25	4.2	-1.7	4.5
ELSU	ALL	MSLP	SUR	21	0	0	2.9	7.6	8.1
ELSU8	ALL	MSLP	SUR	52	2	4	3.0	9.3	9.8
EUJV	ALL	MSLP	SUR	39	0	0	1.9	7.5	7.7
LAXS2	ALL	MSLP	SUR	60	0	0	1.6	6.0	6.2
LBHB	ALL	MSLP	SUR	23	1	4	2.9	-4.4	5.3
OXRO2	ALL	MSLP	SUR	50	3	6	2.5	-5.2	5.8
OZBW6	ALL	MSLP	SUR	52	0	0	1.3	4.8	5.0
S6ES	ALL	MSLP	SUR	34	13	38	2.8	0.1	2.8
UICP	ALL	MSLP	SUR	25	15	60	1.3	-4.2	4.4
V2SA	ALL	MSLP	SUR	26	11	42	3.6	-11.7	12.2
WGXN	ALL	MSLP	SUR	20	0	0	1.3	-4.1	4.4
YJYS6	ALL	MSLP	SUR	21	0	0	1.1	6.4	6.5
YLBF	ALL	MSLP	SUR	24	0	0	1.1	4.9	5.1
ZCAX3	ALL	MSLP	SUR	22	1	5	2.6	6.2	6.8
3EWJ9	ALL	MSLP	SUR	27	0	0	0.9	5.1	5.2
3FTJ4	ALL	MSLP	SUR	26	0	0	1.3	8.7	8.8
9MBW7	ALL	MSLP	SUR	30	0	0	3.0	8.1	8.6
9VHU	ALL	MSLP	SUR	20	0	0	1.9	5.5	5.9
9VIH	ALL	MSLP	SUR	49	0	0	1.6	-5.7	5.9
WIND SPEED									
C6NB7	ALL	SPEED	SUR	58	0	0	3.1	5.0	5.9
C6YC	ALL	SPEED	SUR	23	0	0	2.4	5.2	5.7
ELSJ2	ALL	SPEED	SUR	29	0	0	6.0	6.6	9.0
FNPH	ALL	SPEED	SUR	54	0	0	4.7	5.0	6.8
FNZD	ALL	SPEED	SUR	60	0	0	5.7	8.7	10.3
LAFH4	ALL	SPEED	SUR	26	0	0	3.0	7.6	8.1
MQWU7	ALL	SPEED	SUR	24	0	0	4.7	8.7	9.9
PFFD	ALL	SPEED	SUR	38	1	3	9.0	7.4	11.7
PJKO	ALL	SPEED	SUR	22	0	0	3.6	6.7	7.6
PJOX	ALL	SPEED	SUR	29	1	3	5.1	6.8	8.5
PJOY	ALL	SPEED	SUR	24	0	0	3.4	12.3	12.8
PJVY	ALL	SPEED	SUR	49	0	0	4.1	6.8	7.9
9GYU	ALL	SPEED	SUR	28	8	29	5.9	14.7	15.8
9VIH	ALL	SPEED	SUR	51	0	0	4.6	6.9	8.3
WIND DIRECTION									
CGDN	ALL	DIRN.	SUR	28	0	0	80.7	-24.1	84.2
ELGG3	ALL	DIRN.	SUR	32	0	0	45.5	-38.1	59.3
GQVJ	ALL	DIRN.	SUR	27	0	0	57.1	-34.6	66.8
GYYP	ALL	DIRN.	SUR	33	0	0	92.8	-11.1	93.4
JHZH	ALL	DIRN.	SUR	20	0	0	57.0	-39.4	69.3
SYIY	ALL	DIRN.	SUR	26	0	0	74.0	45.4	86.8
46025	ALL	DIRN.	SUR	46	0	0	31.8	-31.6	44.8
46054	ALL	DIRN.	SUR	77	0	0	43.8	-33.9	55.4
46181	ALL	DIRN.	SUR	55	0	0	40.4	-65.4	76.8
52001	ALL	DIRN.	SUR	34	0	0	135.9	-41.0	141.9
52008	ALL	DIRN.	SUR	33	0	0	38.0	-46.4	60.0
62126	ALL	DIRN.	SUR	83	0	0	24.0	36.0	43.3

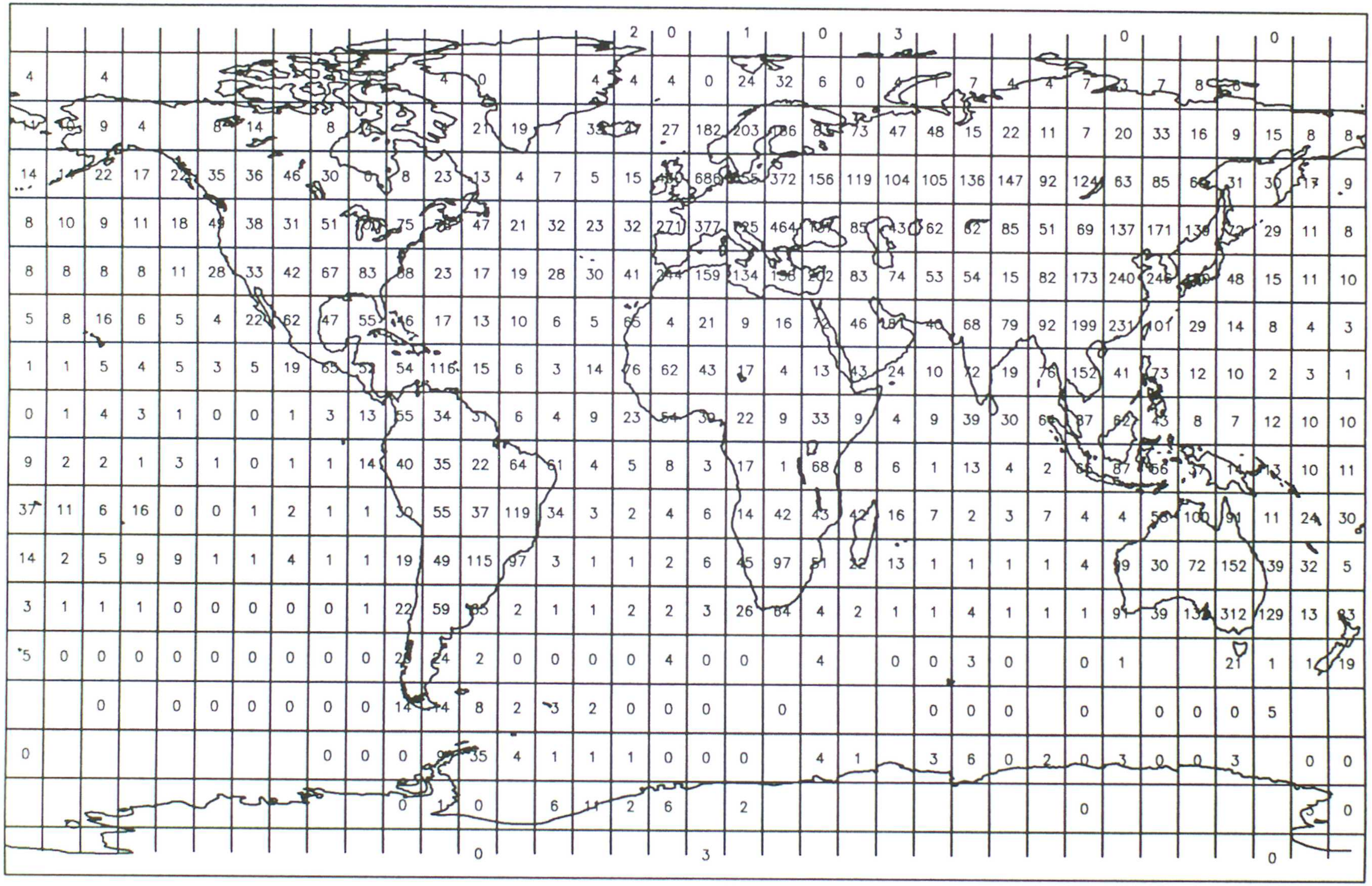
AVAILABILITY – SHIP/SYNOP – JANUARY 1997

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

GLOBAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 18664

FIGURE 1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4 4 4 0 4 4 4 0 24 32 6 0 4 1 7 4 4 7 3 7 8 8
11 10 9 4 8 14 8 14 4 21 19 7 33 47 27 182 203 186 83 73 47 48 15 22 11 7 20 33 16 9 15 8 8
14 14 22 17 22 35 36 46 30 0 8 23 13 4 7 5 15 430 686 355 372 156 119 104 105 136 147 92 124 63 85 66 31 30 17 9
8 10 9 11 18 49 38 31 51 100 75 78 47 21 32 23 32 271 377 325 464 107 85 430 62 62 85 51 69 137 171 139 72 29 11 8
8 8 8 8 11 28 33 42 67 83 88 23 17 19 28 30 41 244 159 134 138 202 83 74 53 54 15 82 173 240 246 100 48 15 11 10
5 8 16 6 5 4 22 62 47 55 46 17 13 10 6 5 65 4 21 9 16 72 46 181 40 68 79 92 199 231 101 29 14 8 4 3
1 1 5 4 5 3 5 19 65 52 54 116 15 6 3 14 76 62 43 17 4 13 43 24 10 72 19 76 152 41 73 12 10 2 3 1
0 1 4 3 1 0 0 1 3 13 55 34 31 6 4 9 23 54 30 22 9 33 9 4 9 39 30 66 37 62 43 8 7 12 10 10
9 2 2 1 3 1 0 1 1 14 40 35 22 64 61 4 5 8 3 17 1 68 8 6 1 13 4 2 65 87 56 37 14 13 10 11
37 11 6 16 0 0 1 2 1 1 30 55 37 119 34 3 2 4 6 14 42 43 42 16 7 2 3 7 4 4 56 100 91 11 24 30
14 2 5 9 9 1 1 4 1 1 19 49 115 97 3 1 1 2 6 45 97 51 22 13 1 1 1 1 4 99 30 72 152 139 32 5
3 1 1 1 0 0 0 0 0 1 22 59 85 2 1 1 2 2 3 26 64 4 2 1 1 4 1 1 1 91 39 132 312 129 13 83
5 0 0 0 0 0 0 0 0 0 28 24 2 0 0 0 0 4 0 0 4 0 0 3 0 0 1 21 1 1 19
0 0 0 0 0 0 0 0 14 14 8 2 3 2 0 0 0 0 0 0 0 0 0 0 0 5
0 0 0 0 9 35 4 1 1 1 0 0 0 4 1 3 6 0 2 0 3 0 0 3 0 0
0 1 0 6 11 2 6 2 0 3 0
0 3 0

TABLE 2

MONITORING OF MARINE SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - DRIFTING BUOYS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures			
Period		:One calendar month.	
Data monitored		:Reports from each unique identifier for drifting buoys.	
Standard of comparison		:Background field from Bracknell global model.	
Position		:Average latitude and longitude for period.	
Observation times		:00, 06, 12, 18 UTC	
Elements monitored		:Mean sea level pressure (hPa). :Wind speed (m s^{-1}). :Wind direction (degrees).	
Parameters monitored			
	:NOBS	:Number of observations received excluding duplicates.	
	:NGE	:Number of observations with gross errors.	
	:PGE	:Percentage of observations with gross errors.	
	:SD	:SD of difference of observations from background values excluding those with gross errors.	
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. a positive bias indicates the observation is veered to the background.**	
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.	
GROSS ERROR LIMIT	:15 hPa	(pressure)	
	:25 m s^{-1}	(vector wind)	
SELECTION CRITERIA :	NOBS	≥ 20 , and one or more of the following:	
	1.¦bias¦	≥ 4 hPa	(pressure),
		≥ 5 m s^{-1}	(wind speed),
		≥ 30 degrees	(direction).
	2.SD	≥ 6 hPa	(pressure),
		≥ 80 degrees	(direction).
	3.PGE	≥ 25.	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 m s^{-1}

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
17516	-54.9	15.3	ALL	MSLP	SUR	188	47	25	4.4	-3.3	5.5
23950	5.4	95.9	ALL	MSLP	SUR	27	0	0	2.3	-7.6	7.9
44849	57.3	-55.8	ALL	MSLP	SUR	289	67	23	6.0	3.1	6.8
44850	55.4	-47.0	ALL	MSLP	SUR	251	56	22	7.7	-1.2	7.7
46564	54.5	-162.8	ALL	MSLP	SUR	322	146	45	6.1	1.1	6.2
46613	38.4	-139.2	ALL	MSLP	SUR	36	15	42	5.5	-0.5	5.6
46764	56.1	-47.3	ALL	MSLP	SUR	229	48	21	6.2	-2.6	6.7
46903	43.8	-148.9	ALL	MSLP	SUR	294	44	15	6.8	2.5	7.2
46912	37.2	-136.3	ALL	MSLP	SUR	282	148	52	6.1	-7.4	9.6
46920	35.5	-124.2	ALL	MSLP	SUR	217	3	1	3.3	4.8	5.8
46953	36.5	-128.9	ALL	MSLP	SUR	36	36	100	0.0	0.0	0.0
54922	-39.1	-141.5	ALL	MSLP	SUR	244	0	0	2.2	-6.1	6.5
55516	-16.3	102.0	ALL	MSLP	SUR	301	0	0	1.2	-4.1	4.2
WIND SPEED											
44513	43.6	-40.6	ALL	SPEED	SUR	270	0	0	4.4	-6.1	7.5
44776	52.3	-32.0	ALL	SPEED	SUR	25	0	0	6.2	-10.4	12.1
46558	34.1	-135.3	ALL	SPEED	SUR	73	0	0	2.1	-7.2	7.5
52539	17.0	112.6	ALL	SPEED	SUR	84	0	0	2.6	-5.4	6.0
62697	57.5	-33.9	ALL	SPEED	SUR	279	87	31	3.5	-1.8	3.9
WIND DIRECTION											
44776	52.3	-32.0	ALL	DIRN.	SUR	21	0	0	134.8	-2.3	134.8
62697	57.5	-33.9	ALL	DIRN.	SUR	252	87	35	119.5	94.8	152.6

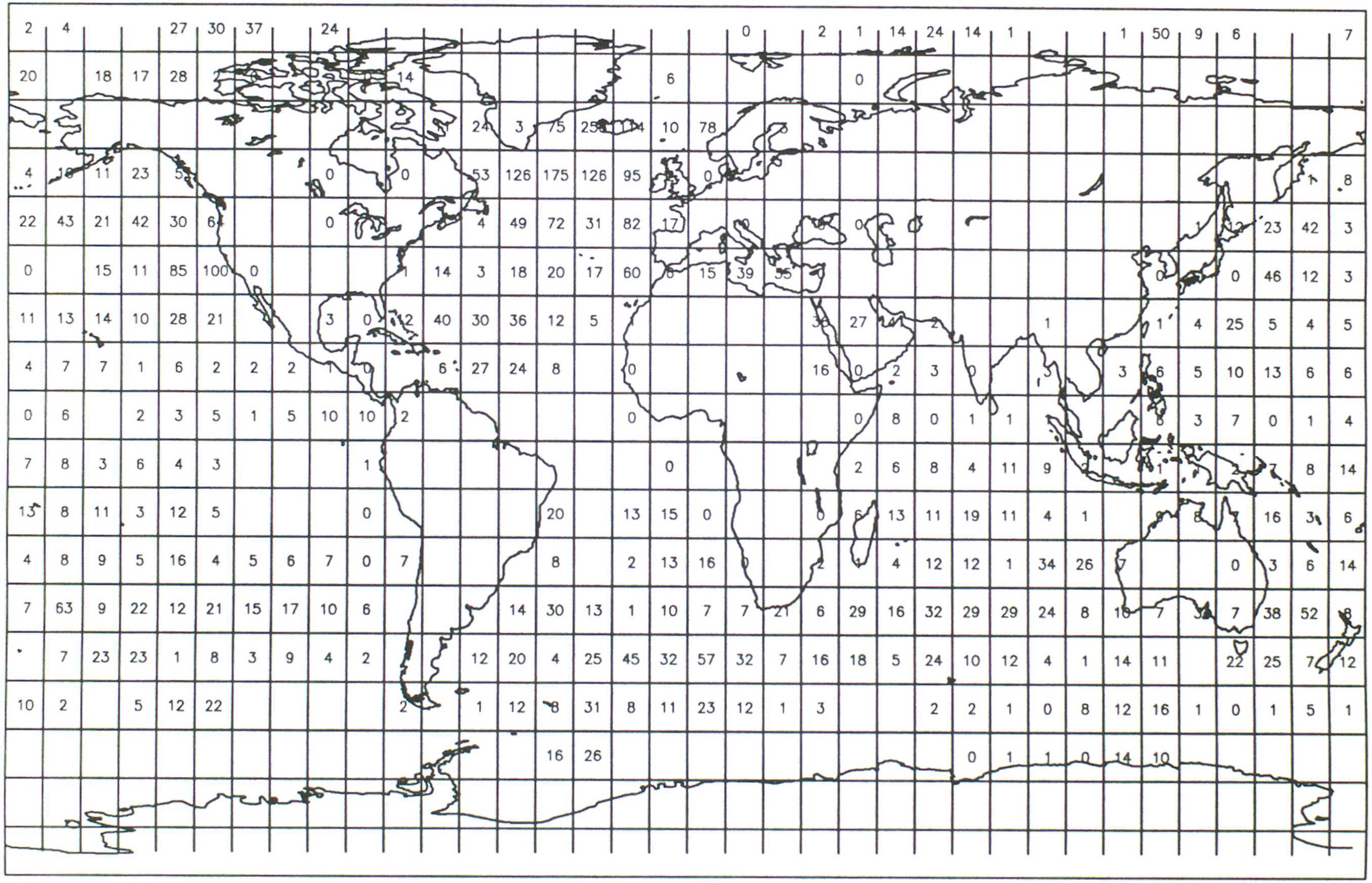
AVAILABILITY – DRIFTER – JANUARY 1997

MAIN HOURS ONLY

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

GLOBAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS = 5204

FIGURE 2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20 18 17 28 14 6 0
24 3 75 25 14 10 78
4 18 11 23 5 0 0 53 126 175 126 95 0 8
22 43 21 42 30 64 0 4 49 72 31 82 17 0 0 0 1 12 23 42 3
0 15 11 85 100 0 1 14 3 18 20 17 60 6 15 39 55 0 0 46 12 3
11 13 14 10 28 21 3 0 12 40 30 36 12 5 36 27 2 1 1 4 25 5 4 5
4 7 7 1 6 2 2 2 1 6 27 24 8 0 16 0 2 3 0 3 3 6 5 10 13 6 6
0 6 2 3 5 1 5 10 10 2 0 0 8 0 1 1 8 3 7 0 1 4
7 8 3 6 4 3 1 0 2 6 8 4 11 9 1 7 8 14
13 8 11 3 12 5 0 20 13 15 0 0 6 13 11 19 11 4 1 9 8 7 16 3 6
4 8 9 5 16 4 5 6 7 0 7 8 2 13 16 0 2 1 4 12 12 1 34 26 7 0 3 6 14
7 63 9 22 12 21 15 17 10 6 14 30 13 1 10 7 7 21 6 29 16 32 29 29 24 8 10 7 38 7 38 52 8
7 23 23 1 8 3 9 4 2 12 20 4 25 45 32 57 32 7 16 18 5 24 10 12 4 1 14 11 22 25 7 12
10 2 5 12 22 2 1 12 8 31 8 11 23 12 1 3 2 2 1 0 8 12 16 1 0 1 5 1
16 26 0 1 1 0 14 10

TABLE 3

MONITORING OF LAND SURFACE OBSERVATIONS
MONTHLY SUSPECT LIST - SYNOPS & AUTOSYNOPS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for synops & autosynops.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00, 06, 12, 18 UTC
Elements monitored		:Mean sea level pressure (hPa).
Parameters monitored	:HT(m)	:Station height (in metres) as given in WMO No. 9 Vol A
	:RP	:Pressure reporting practice M=mean sea level pressure (hPa) reported. S=Station level pressure reported. 8=Geopotential height (m) of 850 hPa surface reported. 7=Geopotential height (m) of 700 hPa surface reported.
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:%REJ	:Percentage of observations flagged.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors.
GROSS ERROR LIMIT	:15 hPa	(pressure)
SELECTION CRITERIA	:NOBS	≥ 20 ,and one or more of the following:
	1.$\vert$bias$\vert$	≥ 4 hPa
	2. SD	≥ 6 hPa
	3.PGE	≥ 25.

N.B. For stn ht ≥ 500m, mslp is that calculated from station level pressure where available.
For stn ht < 500m, mslp is that as reported by the station where available.

WMO REGION 1:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
60445	36.2N	5.4E	1081	S8	116	3	3	1	1.1	4.8	4.9
60468	35.6N	6.2E	1052	S8	113	112	99	0	0.0	-13.5	13.5
60511	35.3N	1.4E	1127	S8	108	106	98	0	0.1	14.8	14.8
60535	34.7N	3.3E	1144	S8	88	0	0	1	1.0	-6.8	6.9
60571	31.6N	2.2W	773	S8	113	0	0	0	1.1	-4.5	4.6
60670	24.6N	9.5E	1054	S8	104	0	0	100	1.3	8.0	8.1
63330	13.5N	39.5E	2212	MS	35	0	0	3	2.4	-6.3	6.7
63333	11.1N	39.7E	1916	S	48	1	2	0	0.8	6.8	6.8
63402	7.7N	36.8E	1577	MS	46	3	7	2	1.1	-9.9	10.0
63451	8.7N	39.0E	1876	MS	28	0	0	4	2.1	-4.3	4.8
63453	8.8N	39.8E	1062	S	29	1	3	0	1.4	12.8	12.9
63478	5.1N	44.6E	320	MS	38	0	0	0	0.8	7.0	7.0
68014	19.6S	18.1E	1411	S8	90	0	0	66	1.4	-5.2	5.4
68396	26.5S	31.3E	641	S8	52	0	0	0	1.1	4.4	4.5
68442	29.1S	26.3E	1354	S8	108	0	0	0	1.1	-4.7	4.8
68488	28.4S	31.1E	1279	S8	42	42	100	0	0.0	0.0	0.0
68752	32.8S	27.4E	524	S8	104	0	0	0	1.1	-7.1	7.2

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
23383	66.9N	93.5E	278	M	72	1	1	33	3.9	4.2	5.7
24382	66.4N	143.2E	196	MS	58	1	2	48	2.9	8.2	8.7
24671	63.9N	135.9E	402	M	52	15	29	54	3.6	9.6	10.3
25703	62.9N	152.4E	205	MS	120	0	0	10	2.2	4.8	5.3
28984	52.9N	70.2E	395	M	27	0	0	100	1.8	9.0	9.2
30253	57.9N	114.2E	275	MS	117	5	4	50	3.5	6.6	7.5
30320	56.9N	105.7E	669	S	55	55	100	0	0.0	0.0	0.0
30549	54.2N	112.0E	1302	S8	38	0	0	45	3.4	-4.6	5.7
30554	54.5N	113.6E	995	M	52	1	2	2	1.4	8.6	8.7
30627	53.1N	105.5E	762	MS	59	3	5	58	2.1	-5.7	6.1
30650	53.2N	112.8E	923	MS	56	0	0	2	2.6	-4.2	4.9
30664	53.5N	115.6E	811	M	25	1	4	0	1.4	-5.1	5.3
30673	53.8N	119.7E	625	MS	60	1	2	17	1.2	-5.0	5.1
30713	52.8N	104.8E	526	MS	60	1	2	37	1.7	-4.6	4.9
30741	52.8N	110.0E	1286	S8	112	2	2	54	2.1	-5.2	5.6
30745	52.5N	111.6E	952	MS	58	0	0	0	1.4	-4.8	5.0
30758	52.1N	113.5E	671	MS	59	1	2	0	1.1	-4.7	4.8
30764	52.6N	115.2E	646	M	54	0	0	0	1.2	-5.9	6.0
30777	52.2N	117.7E	525	MS	26	0	0	0	1.3	-4.4	4.6
30815	51.5N	103.6E	1442	S8	53	0	0	43	2.1	-4.9	5.3
30844	51.4N	110.5E	802	MS	55	2	4	2	1.0	-4.8	4.9
30949	49.6N	112.0E	908	M	53	1	2	0	1.2	-4.1	4.3
30961	50.9N	115.6E	640	MS	57	1	2	2	1.4	-5.6	5.8
30965	50.4N	116.5E	676	MS	57	0	0	0	1.5	-5.4	5.6
30967	49.9N	115.8E	623	MS	52	0	0	2	1.6	-6.7	6.9
31054	59.2N	135.2E	212	MS	96	0	0	14	2.5	4.5	5.1
31123	57.8N	130.9E	255	MS	23	2	9	57	3.2	7.1	7.8
31474	51.6N	133.3E	384	MS	119	0	0	34	3.6	5.0	6.2
31532	50.9N	132.3E	272	M	117	0	0	40	2.9	5.1	5.9
35173	51.6N	69.8E	620	MS	49	49	100	0	0.0	0.0	0.0
40701	39.3N	44.4E	1470	MS	77	2	3	1	1.6	8.1	8.3
40710	37.9N	47.5E	-9999	M	72	10	14	53	3.8	5.4	6.6
40743	36.2N	57.7E	941	MS	99	0	0	27	1.2	-4.4	4.6
40762	35.3N	59.2E	1333	MS	96	20	21	0	0.7	-13.8	13.8
40763	35.2N	58.5E	1060	MS	27	0	0	0	1.1	-5.3	5.4
40783	32.4N	49.7E	1972	MS	66	0	0	0	1.9	-6.7	7.0
40789	33.8N	55.1E	921	MS	67	2	3	3	3.1	9.1	9.6
40798	32.3N	50.9E	1991	MS	63	0	0	30	1.6	-7.8	8.0
40836	30.8N	51.7E	1880	MS	68	0	0	0	1.5	9.8	9.9

WMO REGION 2:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
40859	29.0N	53.7E	1383	MS	67	1	1	1	2.9	9.5	9.9
41254	23.1N	57.7E	1755	S8	88	88	100	0	0.0	0.0	0.0
44212	50.0N	92.1E	939	MS	80	3	4	29	3.3	8.5	9.1
44239	48.8N	103.6E	1208	S	72	3	4	3	1.5	-5.0	5.2
44416	28.6N	81.6E	720	MS	65	2	3	0	1.7	4.2	4.5
44477	27.0N	87.4E	1445	S8	66	66	100	0	0.0	0.0	0.0
47020	41.0N	126.6E	306	M	113	0	0	4	3.0	4.6	5.5
47022	40.8N	128.2E	1206	S	103	3	3	16	1.8	4.2	4.6
51288	45.4N	90.5E	1651	S	119	0	0	52	2.0	-4.6	5.0
51334	44.6N	82.9E	321	M	123	16	13	83	3.4	9.6	10.2
51379	44.0N	89.6E	794	M	122	2	2	49	2.9	8.0	8.5
51495	43.5N	91.6E	874	M	118	0	0	19	2.6	5.2	5.8
51818	37.6N	78.3E	1376	M	123	1	1	24	3.1	5.7	6.5
52378	41.4N	102.4E	960	M	123	0	0	65	3.5	7.1	7.9
52602	38.8N	93.4E	2734	S	121	0	0	0	1.9	-4.6	5.0
52866	36.6N	101.8E	2262	S	123	0	0	0	1.4	-4.2	4.4
53083	44.6N	114.2E	1183	M	123	0	0	89	3.2	8.1	8.7
53352	41.7N	110.4E	1377	M	122	5	4	80	3.4	8.1	8.8
53480	41.0N	113.1E	1416	M	122	1	1	49	3.3	6.2	7.0
53487	40.1N	113.3E	1069	M	123	2	2	33	3.1	5.9	6.7
53502	39.8N	105.8E	1033	M	123	1	1	59	3.6	6.4	7.3
53593	39.8N	114.6E	910	M	121	0	0	29	3.3	6.6	7.4
53705	37.5N	105.7E	1185	M	123	0	0	37	3.2	6.8	7.5
53764	37.5N	111.1E	951	M	123	0	0	12	3.0	4.2	5.2
53923	35.7N	107.6E	1423	M	123	0	0	15	2.1	4.3	4.8
54308	41.2N	116.6E	661	M	121	0	0	1	2.5	4.3	5.0
54311	41.9N	117.8E	844	M	122	0	0	4	3.0	4.8	5.7
54374	41.7N	126.9E	333	MS	121	0	0	2	2.7	4.4	5.2
54386	41.4N	128.2E	1018	M	122	2	2	14	3.2	6.7	7.4
56385	29.5N	103.3E	3049	S	122	0	0	24	1.7	-4.1	4.4
56444	28.5N	98.9E	3488	S	119	119	100	0	0.0	0.0	0.0
56462	29.0N	101.5E	2994	S	115	1	1	0	2.6	8.2	8.6
57006	34.6N	105.8E	1143	M	122	0	0	2	2.2	6.0	6.4
57016	34.3N	107.1E	610	M	122	0	0	4	2.3	4.3	4.9
58445	30.3N	119.4E	1494	S	121	0	0	47	1.7	-4.7	5.0

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
80099	7.1N	70.7W	128	M	33	0	0	3	2.1	-5.4	5.8
82975	9.1S	44.1W	331	MS	47	0	0	0	0.9	4.9	5.0
83214	10.3S	54.9W	285	MS	50	0	0	4	2.3	-5.7	6.1
83235	12.4S	46.4W	660	MS	77	2	3	0	1.2	6.6	6.7
83295	13.4S	39.9W	755	MS	47	2	4	85	0.6	-4.9	4.9
83319	14.7S	52.4W	315	MS	66	2	3	2	1.5	-4.9	5.1
83332	14.1S	46.4W	950	MS	83	20	24	0	1.0	13.6	13.6
83408	14.3S	43.8W	556	MS	70	4	6	0	1.2	10.5	10.6
83423	16.7S	49.3W	729	MS	86	0	0	0	1.2	-5.4	5.5
83531	18.6S	46.5W	896	MS	76	1	1	3	1.5	-6.7	6.9
83538	18.2S	43.6W	1297	MS	76	1	1	0	0.9	-11.2	11.2
83543	18.8S	41.9W	277	MS	37	0	0	14	4.5	4.5	6.4
83587	19.9S	43.9W	850	MS	75	0	0	0	0.8	-7.9	7.9
83689	21.3S	43.8W	1171	MS	56	0	0	0	0.8	4.5	4.6
83916	28.2S	51.5W	806	MS	83	0	0	0	1.1	-4.9	5.0
84401	5.2S	80.6W	55	MS	105	0	0	1	1.6	4.7	5.0
84425	5.9S	76.1W	184	MS	94	0	0	0	1.8	4.4	4.8
84455	6.5S	76.4W	282	MS	77	0	0	0	1.4	7.0	7.1
84472	7.1S	78.5W	2622	S	48	0	0	0	1.0	-5.8	5.9
84501	8.1S	79.0W	30	MS	94	0	0	0	1.1	4.6	4.7

WMO REGION 3:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
84542	9.4S	77.6W	2760	S	39	2	5	8	1.7	5.0	5.3
84686	13.6S	72.0W	3249	S	110	0	0	5	1.8	-5.8	6.1
84782	18.1S	70.3W	469	MS	96	0	0	0	1.5	8.2	8.3
85264	18.5S	64.1W	1998	S	48	6	13	8	1.6	-11.9	12.0
85406	18.3S	70.3W	58	M	119	0	0	1	1.5	5.6	5.8
85442	23.4S	70.4W	135	M	121	0	0	0	1.1	4.8	4.9
85460	26.3S	70.6W	30	M	43	0	0	0	1.2	5.0	5.1
85470	27.3S	70.4W	291	M	88	0	0	1	1.9	4.5	4.9
85488	29.9S	71.2W	142	M	118	0	0	7	1.3	5.6	5.7

WMO REGION 4:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
71094	66.7N	61.4W	722	MS	104	0	0	28	2.3	-4.4	5.0
71421	51.9N	63.3W	561	MS	119	0	0	31	2.2	-4.3	4.8
71882	51.0N	118.2W	443	MS	122	4	3	42	4.6	5.4	7.1
71883	52.1N	119.3W	683	MS	121	0	0	10	3.3	4.0	5.2
71887	50.7N	120.5W	346	MS	120	0	0	8	3.7	4.2	5.6
71889	49.5N	119.6W	344	MS	122	0	0	27	4.0	4.3	5.9
71891	50.2N	121.6W	229	MS	121	1	1	21	4.4	4.6	6.4
71917	80.0N	85.9W	10	MS	122	12	10	48	4.3	7.7	8.8
71958	58.4N	130.0W	816	MS	22	0	0	0	2.7	4.2	5.0
72476	39.1N	108.5W	1475	MS	120	0	0	1	2.0	4.3	4.7
76118	30.4N	109.7W	1040	MS	42	2	5	5	1.0	-12.4	12.4
76160	29.1N	111.0W	211	MS	41	0	0	10	1.1	-4.1	4.2
76539	22.1N	101.0W	1870	MS	95	0	0	1	1.1	-4.2	4.3
76551	21.7N	106.5W	5	MS	38	0	0	16	5.7	-7.0	9.0
76625	20.6N	100.4W	1813	MS	95	0	0	1	1.2	-7.9	8.0
76632	20.1N	98.7W	2417	MS	44	2	5	95	1.1	-5.6	5.7
76634	20.1N	98.4W	2135	MS	99	0	0	97	1.4	-5.5	5.7
76658	19.2N	103.7W	494	MS	46	0	0	2	1.6	5.3	5.5
76698	19.6N	88.0W	20	MS	97	0	0	7	1.3	-4.1	4.3
76750	18.5N	88.3W	9	MS	121	0	0	0	1.1	-4.2	4.3
76762	17.5N	99.5W	1865	MS	96	96	100	0	0.0	0.0	0.0
76773	17.8N	97.8W	1680	MS	26	1	4	15	1.4	8.9	9.0

WMO REGION 5:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
91294	19.0N	155.7W	290	M	73	22	30	0	1.0	-1.7	2.0
91339	5.5N	153.8E	3	MS	47	0	0	0	1.4	-6.1	6.3

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
01245	62.6N	9.7E	630	MS	92	1	1	5	1.1	-5.3	5.4
02045	67.8N	20.4E	408	M	76	76	100	0	0.0	0.0	0.0
06610	46.8N	7.0E	491	MS	123	0	0	2	2.3	4.4	5.0
06670	47.5N	8.5E	432	MS	123	0	0	19	2.0	4.2	4.7
06672	46.9N	8.6E	451	MS	123	0	0	41	2.8	4.5	5.3
06700	46.3N	6.1E	416	MS	123	0	0	5	2.0	4.3	4.7
06720	46.2N	7.3E	481	MS	123	0	0	11	2.9	4.8	5.6
06990	47.1N	9.5E	463	MS	123	0	0	9	2.5	4.8	5.4
08221	40.5N	3.6W	633	MS	121	1	1	18	2.8	5.3	6.0
10578	50.4N	13.0E	1215	S8	123	0	0	67	1.5	-4.1	4.4
10791	49.1N	13.1E	1446	S8	93	0	0	84	1.3	-4.1	4.3
11024	48.4N	15.4E	860	S8	122	109	89	0	0.3	-14.4	14.4
11078	48.0N	15.6E	681	MS	122	0	0	71	1.5	-4.2	4.5
11105	47.3N	9.6E	440	MS	120	0	0	18	2.3	4.2	4.8

WMO REGION 6:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
11150	47.8N	13.0E	450	MS	123	0	0	30	1.9	4.9	5.3
11154	47.9N	13.8E	427	MS	113	1	1	66	1.7	4.6	4.9
11180	47.7N	15.8E	1546	S8	122	0	0	40	1.6	-6.1	6.3
11213	46.6N	13.9E	495	MS	122	0	0	68	2.2	5.6	6.0
11231	46.6N	14.3E	476	MS	123	0	0	10	1.9	5.8	6.1
11384	47.6N	15.8E	1323	S8	122	0	0	34	1.5	-4.9	5.1
11385	47.8N	16.0E	936	S8	121	0	0	88	1.5	-4.4	4.6
11448	49.2N	13.3E	365	MS	120	0	0	43	2.0	4.4	4.8
11541	48.9N	14.5E	436	MS	20	0	0	10	1.5	4.0	4.3
11735	50.1N	17.2E	1512	S8	121	0	0	98	1.4	-5.6	5.8
11787	49.6N	18.4E	1327	S8	122	0	0	91	1.3	-4.0	4.2
12510	50.7N	15.7E	1613	8	119	0	0	99	1.5	-5.4	5.6
12851	47.9N	20.0E	1015	S	122	0	0	48	1.9	-4.5	4.9
13289	44.1N	21.9E	1039	8	107	2	2	83	2.6	-4.9	5.5
13369	43.3N	20.0E	1039	8	107	1	1	45	1.4	-4.5	4.7
14235	45.9N	16.0E	988	S8	93	0	0	72	1.5	-4.0	4.3
14324	44.8N	15.0E	1597	S8	93	0	0	38	2.1	-4.2	4.7
16020	46.5N	11.3E	1461	MS	110	110	100	0	0.0	0.0	0.0
16134	44.2N	10.7E	2173	S8	110	2	2	15	2.3	-4.7	5.2
16227	41.9N	13.6E	655	MS	121	112	93	0	0.6	-14.1	14.1
16549	39.1N	8.3E	12	MS	121	0	0	0	1.1	-4.8	4.9
16614	40.4N	21.3E	604	MS	96	1	1	31	1.1	-7.0	7.1

ANTARCTIC:

STATION	LAT	LONG	HT(M)	RP	NOBS	NGE	PGE	%REJ	SD	BIAS	RMS
89744	74.0S	43.0E	3353	S	94	0	0	0	1.3	8.7	8.8
89803	68.5S	102.2E	2125	S	63	8	13	92	2.1	-11.3	11.5
89860	74.2S	160.3E	1772	S	87	0	0	0	2.4	-11.5	11.7

TABLE 4

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Statistics for each airline carrier.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :All hours combined.

Level(s) monitored :70.0 - 500.0 hPa

Elements monitored :TEMP in °C ; WIND in m s^{-1}

Parameters monitored

:N REP. :Number of observations received excluding duplicates.

:PG :Percentage of observations with gross errors.

:PR :Percentage of observations rejected by quality control including rejections from the duplicate check.

:PC :Percentage of observations with calm winds.

:RMS :Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.

:BIAS :Mean difference of observations from background values excluding those with gross errors in Temperature & Wind Speed.

GROSS ERROR LIMITS :10.0 °C ; 60 m s^{-1} Vector Wind

SELECTION CRITERIA :N REP $\geq$ 20

		TEMPERATURE					WIND				
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAA	128	3	5	1.8	0.4	126	0	1	0	7.2	1.7
AAL	5772	0	2	2.0	0.2	5802	0	2	0	9.0	0.9
AAR	2214	1	2	2.0	0.0	2226	0	2	0	9.2	0.2
ACA	1828	0	2	2.1	-0.1	1895	0	2	0	8.0	0.9
ACI	57	2	4	2.0	0.9	59	0	2	0	9.5	1.4
AEA	646	2	100	2.9	1.2	630	0	4	0	9.2	0.8
AEL	1223	0	4	2.1	-0.3	1234	0	3	0	9.2	0.6
AEY	112	2	5	2.4	1.2	112	0	4	0	8.8	0.9
AFL	203	0	1	2.3	1.0	206	0	2	0	8.7	1.3
AFR	1502	1	4	1.9	0.0	1562	0	5	0	8.7	1.0
AIH	171	1	4	2.0	0.0	179	0	6	0	9.4	1.4
AJM	79	3	10	1.9	-0.9	78	0	6	0	9.5	-0.5
AMT	351	1	3	2.4	0.5	351	0	1	0	10.3	0.3
AMX	225	1	6	2.2	-0.2	228	0	4	0	8.9	1.1
ANA	960	1	2	2.2	-0.5	960	0	2	0	8.8	0.6
ANZ	2694	2	3	1.7	0.1	2659	0	3	1	8.5	1.2
AOM	696	1	2	1.9	0.8	702	0	2	0	7.8	1.1
ARP	113	1	2	2.3	1.3	113	0	6	5	7.8	2.0
AUA	73	0	7	2.2	-0.3	75	0	4	0	8.7	0.1
AVA	344	2	6	2.5	0.3	345	0	4	0	10.8	0.8
AVN	56	4	5	1.0	0.3	55	0	4	0	7.6	0.0
AXA	96	1	3	2.0	0.2	94	0	6	0	12.5	1.9
AZA	532	1	8	2.4	0.6	539	0	5	0	9.4	0.9
BAL	538	0	13	1.9	-0.3	551	0	13	0	9.2	0.2
BAW	1608	1	4	2.0	0.0	1633	0	4	0	8.7	1.4
BBB	41	0	2	1.7	-0.6	42	0	7	2	9.9	1.0
BWA	425	1	100	2.9	2.0	427	0	5	0	10.4	1.0
CAL	1893	0	2	2.1	0.0	1902	0	3	0	9.0	0.3
CCA	180	1	4	3.2	-0.3	194	1	92	0	12.3	0.3
CDN	2216	0	2	2.2	0.4	2230	0	3	0	8.9	0.9
CES	283	1	4	2.5	0.0	289	1	4	0	9.9	-0.7
CFC	20	5	25	2.5	0.5	22	0	18	0	8.0	1.2
CFG	1309	0	3	2.1	-0.8	1315	0	3	0	8.9	0.5
CKS	244	0	4	2.9	1.9	246	0	4	0	10.2	-0.5
CKT	133	0	2	1.8	0.6	129	0	6	0	10.0	0.4
CLX	211	0	2	2.1	-0.7	214	0	1	0	7.6	1.8
CMI	787	2	3	2.3	1.2	796	0	2	0	8.8	0.2
CMM	305	1	4	2.3	0.1	308	0	2	0	9.7	0.9
COA	873	1	3	2.0	0.7	881	0	3	0	9.5	0.4
CPA	51	0	2	1.7	-0.3	57	0	4	0	8.1	0.0
CRL	869	1	4	2.2	0.4	873	0	3	0	8.4	0.9
CSA	34	6	9	1.3	-0.3	34	0	3	0	7.1	0.5
CTM	23	4	22	2.3	0.9	23	0	13	0	6.3	1.1
CUB	417	0	100	2.4	1.4	413	0	65	0	11.1	0.8
DAL	5440	1	3	2.3	0.7	5102	0	3	0	9.3	0.6
DHL	359	6	100	4.8	-2.7	361	0	100	0	14.5	2.3
DLH	3244	0	8	2.0	0.4	3268	0	9	1	8.1	0.9
DOA	124	0	3	2.2	-0.5	125	0	3	0	10.0	1.3
EIA	91	0	4	2.1	-0.2	91	1	5	0	9.0	1.0
ELY	177	1	16	2.7	0.7	184	0	10	0	9.1	0.0
EVA	730	0	3	2.2	0.1	778	0	3	0	9.1	0.3
EWW	158	1	100	2.4	1.0	162	0	100	0	16.8	3.9
FDX	1290	0	2	2.0	0.6	1302	0	2	0	8.2	0.8
FIN	405	0	3	1.8	0.3	405	0	4	1	7.9	0.9
FJI	576	3	4	1.6	0.8	566	0	2	0	7.9	1.4
FOM	127	1	7	2.6	1.5	128	0	100	1	10.9	0.1
GAF	57	0	12	3.5	0.8	57	4	7	0	8.9	1.9
GFA	20	5	10	1.2	0.4	20	0	10	0	8.5	1.4
GHA	23	0	0	1.5	0.5	23	0	4	0	9.0	1.6

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
GIA	206	1	2	1.9	0.6	211	1	3	1	8.6	1.3
HAL	1817	0	2	2.2	0.3	1821	0	3	0	11.1	0.1
HLF	217	0	3	2.0	-1.1	215	1	2	0	7.9	1.5
HRH	89	4	9	1.1	0.6	86	0	6	0	8.1	1.8
HZM	29	0	0	1.9	0.4	30	0	7	0	12.1	2.2
IBE	3083	1	19	2.2	0.4	3075	0	20	0	10.0	0.8
ICE	661	1	2	1.8	0.1	656	0	2	0	8.3	0.9
JAL	7031	0	2	2.2	0.3	7073	0	2	0	8.5	0.5
JAZ	121	2	1	2.4	1.4	122	0	1	1	7.2	0.2
KAL	3582	1	2	2.2	-0.2	3578	0	2	0	9.1	0.2
KLM	2831	0	2	1.9	0.3	2844	0	3	0	9.0	0.7
LDA	330	0	6	2.3	-1.0	333	0	7	0	8.7	0.2
LDI	431	1	21	2.4	-1.2	437	0	18	0	7.5	0.6
LIB	377	1	3	2.0	1.0	378	0	5	0	9.4	1.3
LKR	29	0	0	1.8	1.3	29	0	7	0	12.0	-0.7
LOT	339	1	1	2.3	-1.3	339	0	4	0	8.4	0.5
LTU	975	1	3	1.9	0.3	953	0	3	0	8.5	0.9
MAS	292	1	1	2.2	-0.8	312	0	4	0	10.8	0.4
MDA	201	0	0	2.2	0.1	201	0	3	1	8.8	-0.1
MON	29	0	0	1.3	-0.2	27	0	0	0	7.8	0.4
MPH	982	0	1	2.1	-0.7	990	0	2	0	8.3	0.6
NCA	546	0	1	2.1	0.4	544	0	3	1	9.8	1.1
NWA	10352	0	2	2.2	0.8	10391	0	2	0	8.9	0.6
PAC	90	1	4	2.1	0.5	94	0	3	0	9.0	1.1
PAL	1197	1	4	2.2	-0.2	1200	0	4	0	10.2	0.5
PAO	287	1	4	1.6	0.1	282	0	2	0	6.4	1.3
QFA	1459	1	2	1.6	0.4	1458	0	3	1	7.3	1.2
RAF	200	0	0	1.8	1.0	200	0	1	0	7.5	0.2
RAM	35	3	9	3.2	-1.0	35	0	6	0	12.7	0.5
RCH	530	1	96	3.4	1.0	531	1	96	0	12.9	1.4
RJA	56	0	7	2.5	1.1	57	0	4	0	7.3	1.1
RKA	99	0	0	2.0	-0.2	99	1	3	0	9.6	-0.1
RON	25	0	0	0.9	0.3	25	0	4	0	7.5	0.9
ROT	20	0	5	2.3	-1.2	21	0	0	0	7.8	-0.2
RRR	64	2	17	2.5	0.4	64	0	17	0	8.4	-1.0
SAA	297	0	1	2.2	-0.6	297	0	2	0	9.2	0.9
SAB	72	0	3	2.0	0.0	75	0	1	0	8.3	2.6
SAS	1042	0	1	2.0	0.3	1044	0	3	0	8.9	0.8
SCX	26	8	19	2.9	1.8	26	0	15	0	12.2	-2.3
SEU	55	0	2	2.0	0.2	54	0	2	0	8.1	-0.1
SIA	1384	0	2	2.3	-0.8	1411	0	2	0	9.2	0.2
SLR	84	0	19	1.4	-0.5	86	0	20	0	8.1	-0.2
SOL	50	2	4	1.6	0.8	49	0	6	6	6.7	2.0
SPP	210	0	11	1.9	0.0	191	0	12	0	8.8	0.7
SVA	142	0	6	2.1	0.9	148	0	100	0	14.6	3.6
SVV	28	0	0	3.0	1.7	28	4	21	0	15.3	-1.8
SWR	173	0	3	2.0	0.7	178	0	5	1	9.5	2.3
TAP	455	3	7	2.2	0.0	456	0	6	0	10.8	1.1
TEJ	64	2	22	1.8	0.6	65	2	18	0	9.2	-0.1
THA	247	0	2	2.6	-0.9	259	2	5	0	10.3	-0.6
TOW	75	1	8	2.1	1.2	78	0	13	0	10.1	0.2
TSC	24	0	0	2.0	1.3	23	0	0	0	6.5	0.5
TWA	1653	1	2	2.2	0.1	1640	0	3	0	9.6	1.1
TWE	27	0	0	2.4	-0.1	28	0	0	0	9.2	-0.1
UAL	12599	1	3	2.2	-0.1	12681	0	2	0	8.8	0.5
ULE	235	0	2	1.9	0.2	232	0	2	0	8.9	0.7
UPS	897	1	10	2.0	0.2	900	0	12	0	9.1	0.9
USA	301	0	1	1.9	0.0	304	0	3	0	9.4	1.4
VIA	420	7	16	3.2	0.6	422	0	8	0	9.4	1.3

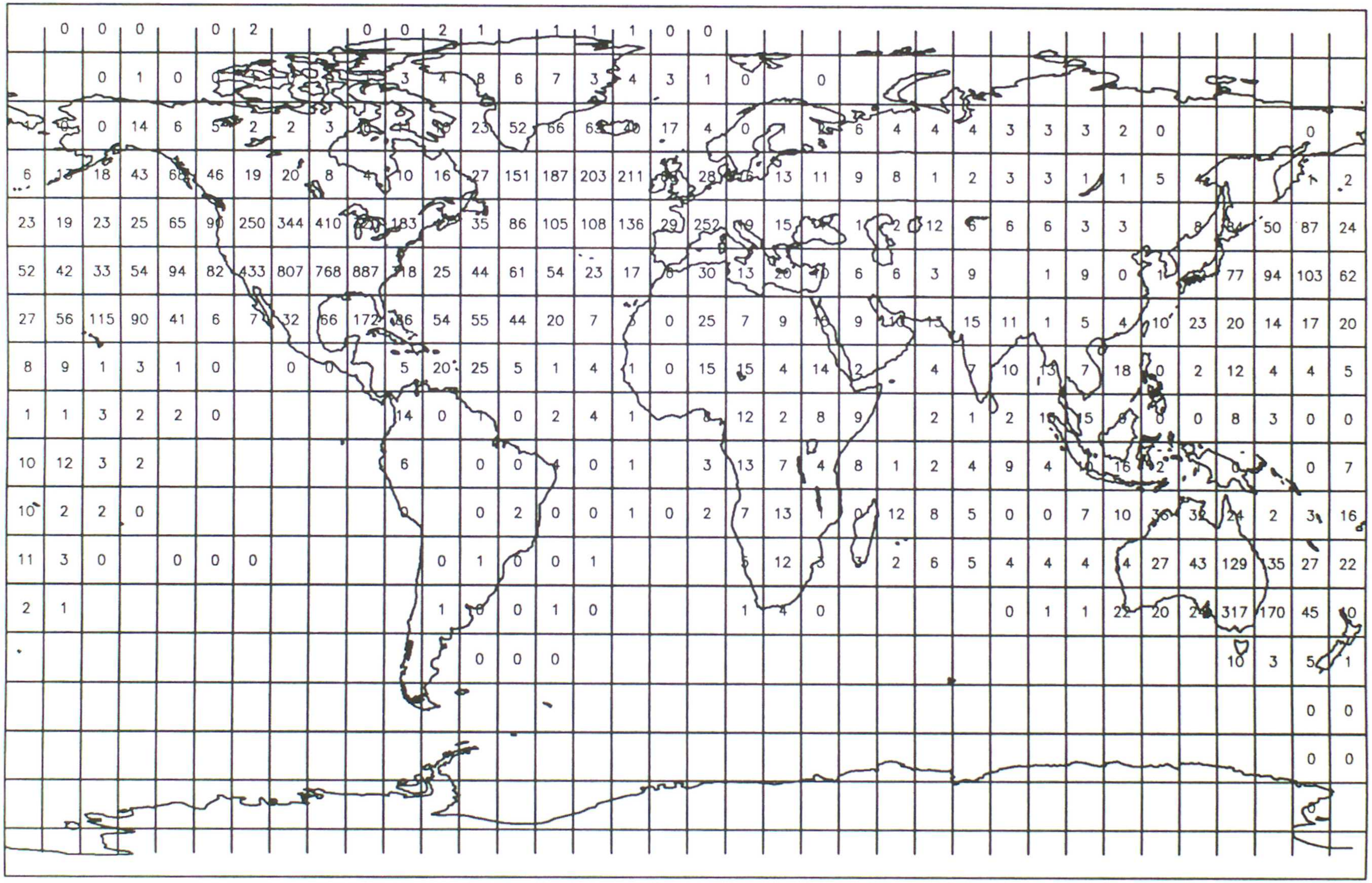
		TEMPERATURE						WIND			
IDENT.	N.RÉP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
VIR	163	0	3	2.0	-0.5	165	0	6	1	9.8	1.2
VRG	38	0	3	1.7	0.8	38	0	3	0	9.1	0.9
VSP	177	1	5	2.3	0.4	179	1	4	0	9.4	-0.4
WOA	106	1	10	2.5	0.9	101	0	12	0	10.7	0.8
AF	34	3	6	1.9	0.0	35	0	9	0	10.7	1.6
AN	23941	0	5	1.0	0.1	23731	0	5	0	7.3	1.0
BA	19682	0	7	1.3	0.4	19608	0	14	0	7.7	1.5
DL	112217	0	2	1.6	0.1	112217	0	2	0	7.9	1.2
IT	674	0	2	1.2	0.1	674	0	2	0	9.6	3.2
KL	9227	0	5	1.4	0.4	9222	0	5	0	7.6	1.2
LH	3816	0	2	1.5	0.4	3792	0	2	0	7.4	1.3
MK	5015	0	1	1.6	1.0	4985	0	1	0	8.4	1.8
NW	40264	0	2	1.7	0.3	40264	0	3	0	7.6	1.0
QF	2606	0	1	1.0	0.2	2605	0	1	0	7.2	1.2
SA	3450	0	1	1.3	0.7	3446	0	1	0	8.2	1.5
SV	1348	0	1	1.3	0.7	1333	0	1	0	7.8	2.0
N	516	2	6	3.0	0.8	538	0	5	0	10.5	0.7

MEAN DAILY COUNT OF AIRCRAFT 70 – 500 HPA

JANUARY 1997

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

FIGURE 3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23 19 23 25 65 90 250 344 410 183 35 86 105 108 136 29 252 15 1 2 12 6 6 6 3 3 8 50 87 24
52 42 33 54 94 82 433 807 768 887 18 25 44 61 54 23 17 30 13 6 6 3 9 1 9 0 1 77 94 103 62
27 56 115 90 41 6 7 32 66 172 86 54 55 44 20 7 0 25 7 9 9 15 11 1 5 4 10 23 20 14 17 20
8 9 1 3 1 0 0 0 5 20 25 5 1 4 1 0 15 15 4 14 2 4 7 10 13 7 18 0 2 12 4 4 5
1 1 3 2 2 0 14 0 0 2 4 1 12 2 8 9 2 1 2 15 0 0 8 3 0 0
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10 2 2 0 0 2 0 0 1 0 2 7 13 12 8 5 0 0 7 10 32 24 2 16
11 3 0 0 0 0 0 1 0 0 1 12 2 6 5 4 4 4 4 27 43 129 35 27 22
2 1 1 0 1 0 1 4 0 0 1 1 22 20 317 170 45 10
0 0 0 10 3 5 1
0 0
0 0

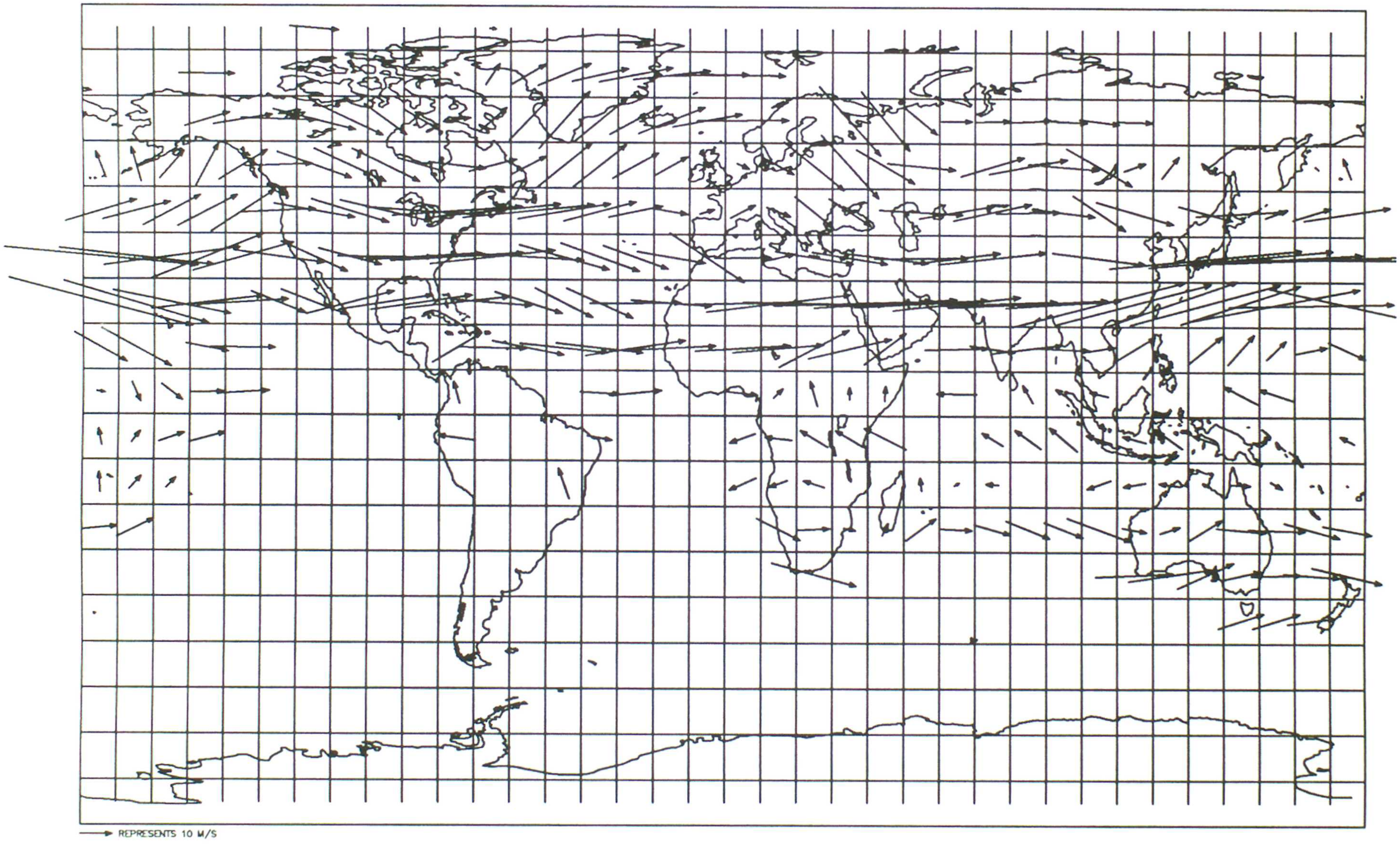
AIRCRAFT MEAN WINDS BETWEEN 70 AND 500 HPA

FIGURE 4

JANUARY 1997

OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED

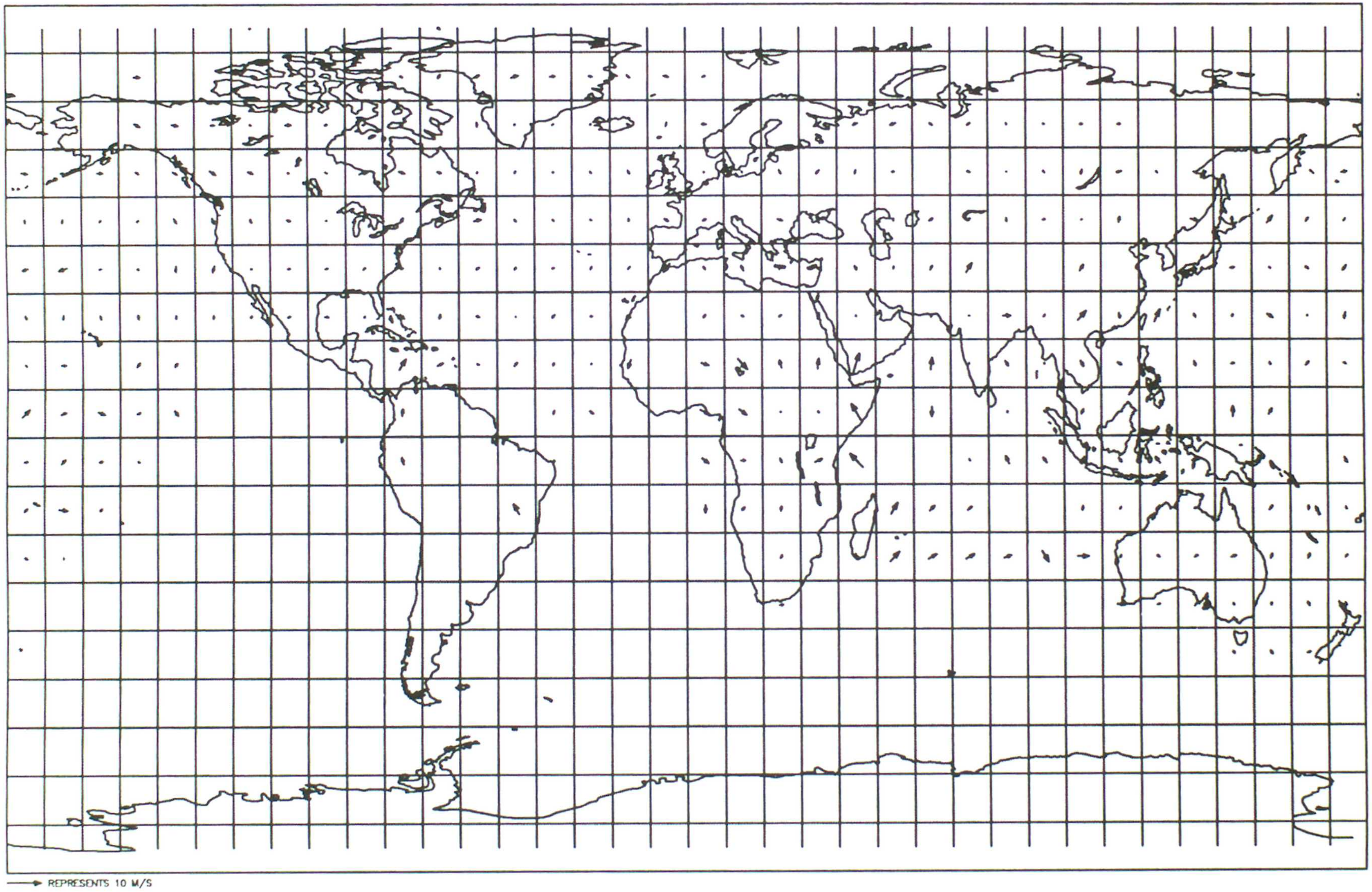
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



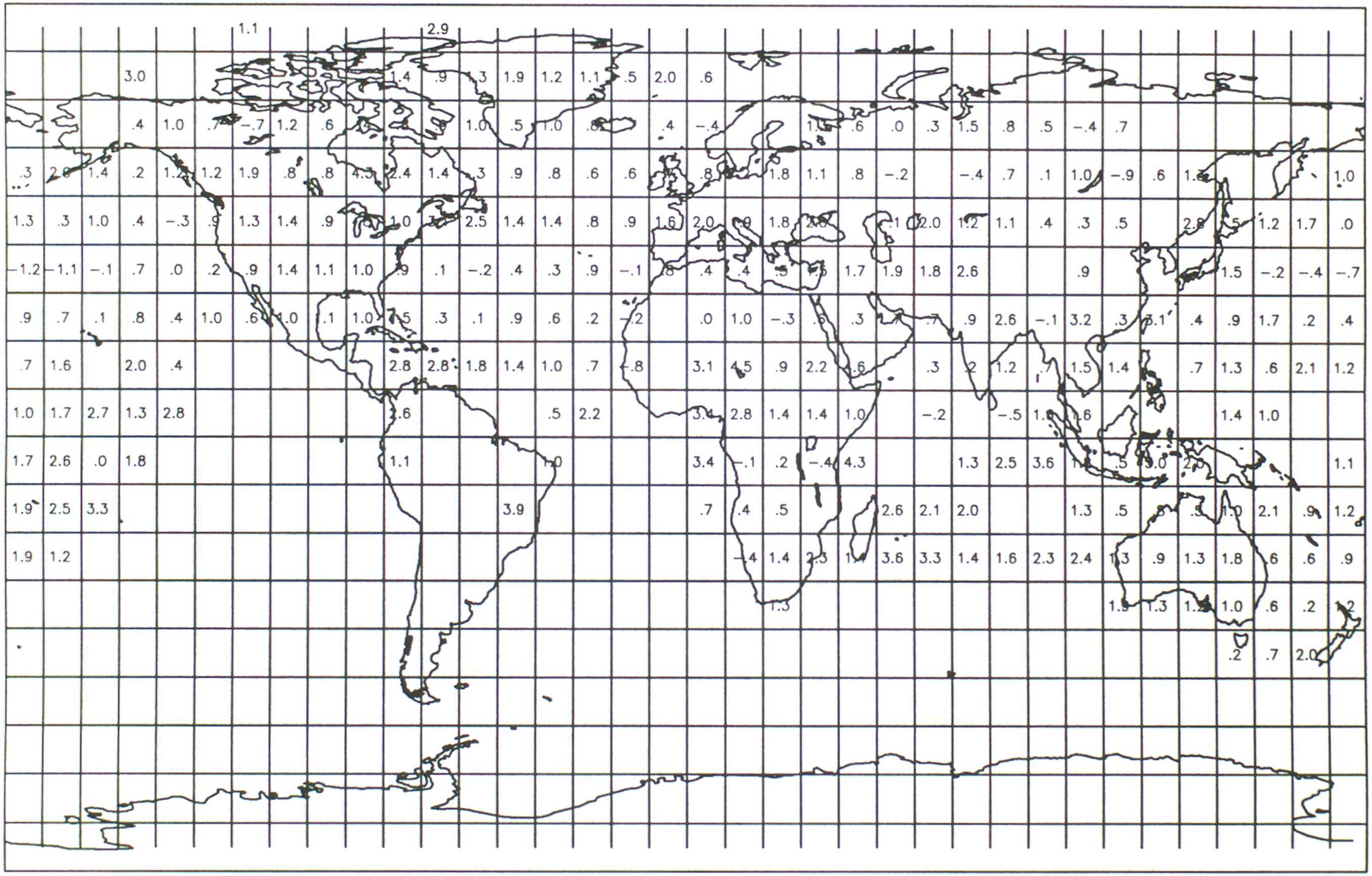
AIRCRAFT MEAN O–B WINDS BETWEEN 70 AND 500 HPA

FIGURE 5

JANUARY 1997
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT



AIRCRAFT : MEAN O–B SPEEDS (M/S) BETWEEN 70 AND 500 HPA FIGURE 6
JANUARY 1997
OBSERVATIONS WITH O–B VECTOR DIFFERENCE > 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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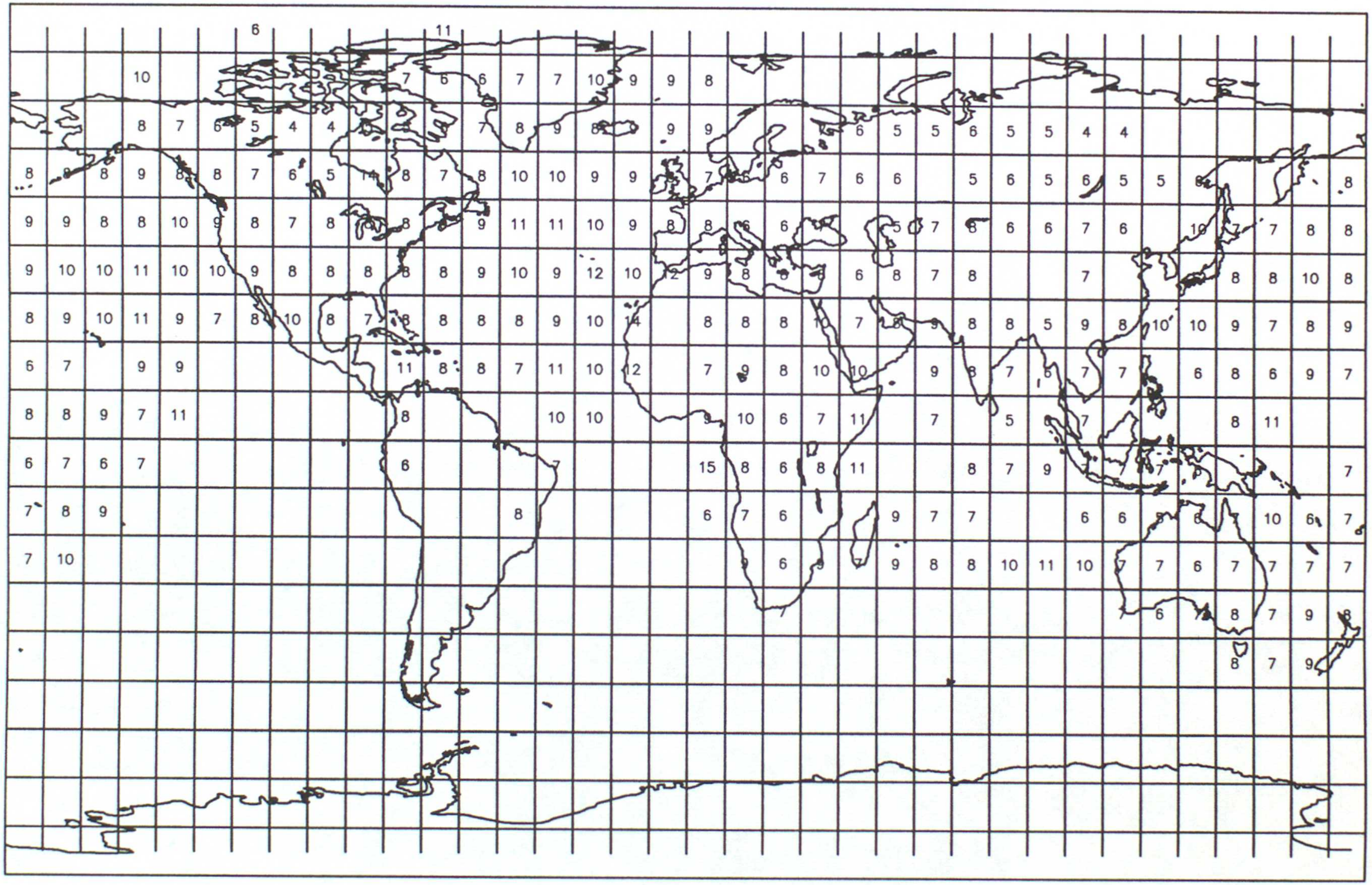
3.0 1.4 .9 1.3 1.9 1.2 1.1 .5 2.0 .6
.4 1.0 .7 –.7 1.2 .6 1.0 .5 1.0 .4 –.4 .6 .0 .3 1.5 .8 .5 –.4 .7
.3 2.8 1.4 .2 1.2 1.2 1.9 .8 .8 4.3 2.4 1.4 .3 .9 .8 .6 .6 .8 1.8 1.1 .8 –.2 –.4 .7 .1 1.0 –.9 .6 1.0
1.3 .3 1.0 .4 –.3 .9 1.3 1.4 .9 1.0 2.5 1.4 1.4 .8 .9 1.6 2.0 .9 1.8 2.0 2.0 1.2 1.1 .4 .3 .5 2.8 1.2 1.7 .0
–1.2 –1.1 –.1 .7 .0 .2 .9 1.4 1.1 1.0 .9 .1 –.2 .4 .3 .9 –.1 .4 .4 .5 1.7 1.9 1.8 2.6 .9 1.5 –.2 –.4 –.7
.9 .7 .1 .8 .4 1.0 .6 1.0 .1 1.0 .5 .3 .1 .9 .6 .2 –.2 .0 1.0 –.3 .3 .9 2.6 –.1 3.2 .3 3.1 .4 .9 1.7 .2 .4
.7 1.6 2.0 .4 2.8 2.8 1.8 1.4 1.0 .7 .8 3.1 4.5 .9 2.2 .6 .3 .2 1.2 1.5 1.4 .7 1.3 .6 2.1 1.2
1.0 1.7 2.7 1.3 2.8 2.6 .5 2.2 3.4 2.8 1.4 1.4 1.0 –.2 –.5 1.6 1.6 1.4 1.0
1.7 2.6 .0 1.8 1.1 1.0 3.4 –.1 .2 –.4 4.3 1.3 2.5 3.6 .5 3.0 2.0 1.1
1.9 2.5 3.3 3.9 .7 .4 .5 2.6 2.1 2.0 1.3 .5 .5 1.0 2.1 .9 1.2
1.9 1.2 –.4 1.4 2.3 1.4 3.6 3.3 1.4 1.6 2.3 2.4 1.3 .9 1.3 1.8 .6 .6 .9
1.3 1.5 1.3 1.3 1.0 .6 .2 1.2
.2 .7 2.0

AIRCRAFT : RMS O–B VECTOR (M/S) BETWEEN 70 AND 500 HPA FIGURE 7
JANUARY 1997
OBSERVATIONS WITH O–B VECTOR DIFFERENCE GREATER THAN 60 MPS EXCLUDED
VALUES ARE PRINTED WHERE > 30 OBS ARE PRESENT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9 10 10 11 10 10 9 8 8 8 8 8 9 10 9 12 10 12 9 8 8 6 6 8 7 8 7 8 8 10 8
8 9 10 11 9 7 8 10 8 7 8 8 8 8 9 10 14 8 8 8 10 7 8 9 8 8 5 9 8 10 10 9 7 8 9
6 7 9 9 11 8 8 7 11 10 12 7 9 8 10 10 9 8 7 6 7 7 6 8 6 9 7
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6 7 6 7 6 7 15 8 6 8 11 8 7 9 7 7 7
7 8 9 8 6 7 6 9 7 7 6 6 8 6 7 10 6 7
7 10 9 6 9 7 9 8 8 10 11 10 7 7 6 7 7 7 7
6 7 8 7 9 8
8 7 9

TABLE 5

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 30.0 hPa
Element monitored		:GEOPOTENTIAL HEIGHT IN metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown duringperiod.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix 1.1	
SELECTION CRITERIA	: ≥3 levels with ≥10 observations and ≥ 100 m weighted RMS.	

ONLY THE WORST LEVEL IS SHOWN WITH UNWEIGHTED RMS

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	SD	BIAS	RMS	NUM LEVELS
EHOA	12	Z	500	24/ -16	9	1	47.8	55.0	72.9	8
25563	00	Z	100	65/ 178	13	0	38.3	138.4	143.6	4
37018	00	Z	200	44/ 39	26	0	31.6	96.3	101.4	4
42027	12	Z	150	34/ 75	12	0	98.5	67.0	119.1	4
42314	12	Z	300	27/ 95	14	0	55.2	-54.3	77.4	4
42339	12	Z	150	26/ 73	11	0	77.4	83.3	113.7	5
42369	00	Z	150	27/ 81	12	0	120.7	-24.6	123.2	4
42369	12	Z	30	27/ 81	14	1	167.6	168.4	237.6	9
42379	00	Z	30	27/ 83	10	0	151.0	143.4	208.2	8
42379	12	Z	50	27/ 83	15	0	135.7	74.9	155.0	4
42492	00	Z	70	26/ 85	19	0	137.8	21.6	139.5	4
42492	12	Z	150	26/ 85	26	0	105.3	-21.4	107.5	5
42647	00	Z	300	23/ 73	20	0	33.5	-65.7	73.8	5
42647	12	Z	30	23/ 73	9	2	49.7	269.1	273.7	5
42867	00	Z	30	21/ 79	13	0	160.1	185.0	244.7	5
42971	00	Z	30	20/ 86	10	0	156.8	97.1	184.5	4
43014	00	Z	70	20/ 75	12	1	104.5	-175.4	204.2	8
43041	00	Z	70	19/ 82	13	0	134.5	-68.0	150.7	5
43128	00	Z	200	17/ 78	24	0	69.7	-77.8	104.4	7
43128	12	Z	200	17/ 78	25	1	91.3	-11.7	92.1	8
43150	00	Z	1000	18/ 83	10	0	7.2	-35.9	36.6	9
43150	12	Z	200	18/ 83	22	1	68.3	-45.9	82.3	5
43185	00	Z	150	16/ 81	24	0	96.2	-36.5	102.9	7
43185	12	Z	100	16/ 81	23	0	112.8	32.1	117.2	5
43192	00	Z	200	15/ 74	21	0	84.7	-29.0	89.5	4
43192	12	Z	30	15/ 74	11	0	86.9	212.0	229.1	5
43285	00	Z	70	13/ 75	20	2	154.6	-45.1	161.1	7
43285	12	Z	30	13/ 75	12	3	95.4	253.2	270.5	8
43295	12	Z	100	13/ 78	12	0	61.5	148.9	161.1	4
43346	12	Z	30	11/ 80	16	3	91.0	290.9	304.8	8
43371	00	Z	50	8/ 77	21	1	106.9	-197.4	224.5	9
54337	00	Z	70	41/ 121	15	0	111.7	89.5	143.2	5
54497	12	Z	70	40/ 124	22	0	56.9	110.1	123.9	4
60360	12	Z	300	37/ 8	5	7	18.6	-173.4	174.4	6
60490	12	Z	300	36/ -1	8	13	51.2	-131.4	141.0	8
61902	12	Z	100	-8/ -14	13	2	73.5	162.8	178.7	6
62414	00	Z	150	24/ 33	28	1	79.6	81.4	113.8	5
62414	12	Z	30	24/ 33	16	4	46.6	209.7	214.9	5
91557	12	Z	200	-18/ 168	25	1	17.6	-208.7	209.5	10
96163	00	Z	150	-1/ 100	19	2	92.2	38.7	100.0	7
96237	00	Z	200	-2/ 106	17	0	46.9	-109.2	118.8	8
97560	00	Z	250	-1/ 136	18	0	69.7	-38.4	79.6	4
97560	12	Z	50	-1/ 136	10	0	97.1	-133.5	165.1	7
97724	00	Z	100	-4/ 128	8	7	187.4	72.4	200.9	6
97724	12	Z	70	-4/ 128	7	5	148.3	184.1	236.4	6

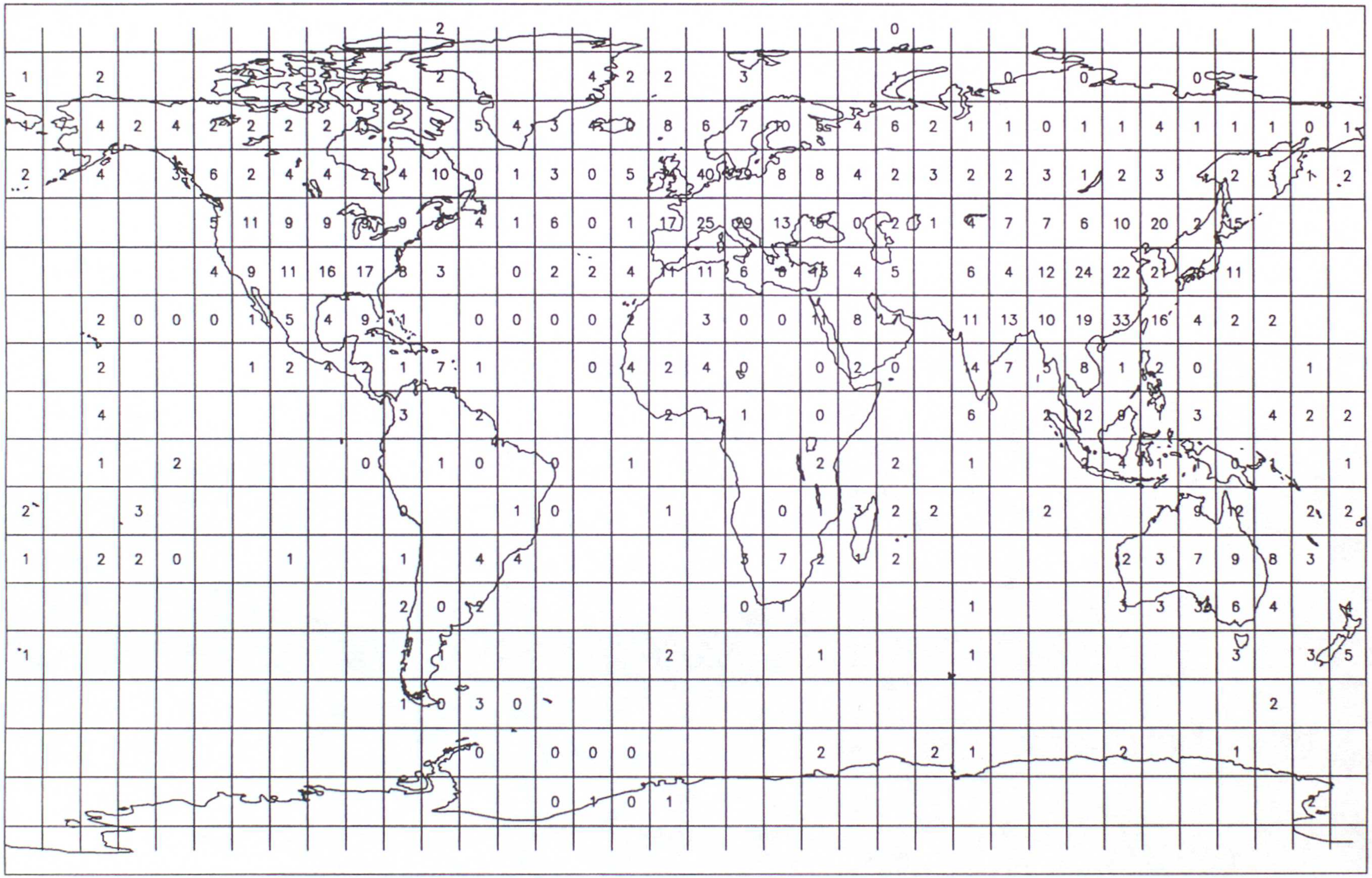
AVAILABILITY – TEMP – 500 HPA GEOPOTENTIAL – JANUARY 1997

FIGURE 8

ALL HOURS

10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS

GLOBAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1319


2 0
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4 2 4 2 2 2 2 5 4 3 4 8 6 7 10 5 4 6 2 1 1 0 1 1 4 1 1 1 0 1
2 2 4 3 6 2 4 4 2 4 10 0 1 3 0 5 4 40 29 8 8 4 2 3 2 2 3 1 2 3 2 3 1 2
5 11 9 9 9 9 4 1 6 0 1 17 25 29 13 6 0 2 1 4 7 7 6 10 20 2 15
4 9 11 16 17 8 3 0 2 2 4 11 11 6 8 13 4 5 6 4 12 24 22 21 6 11
2 0 0 0 1 5 4 9 1 0 0 0 0 2 3 0 0 1 8 11 13 10 19 33 16 4 2 2
2 1 2 4 2 1 7 1 0 4 2 4 0 0 2 0 4 7 5 8 1 2 0 1
4 3 2 2 1 0 6 2 12 9 1 3 4 2 2
1 2 0 1 0 0 1 2 2 1 2 4 1 1 0 1
2 3 0 1 0 1 0 1 3 2 2 2 7 9 12 2 2
1 2 2 0 1 1 4 4 3 7 2 1 2 2 3 7 9 8 3
2 0 2 0 1 1 3 3 3 6 4 4
1 1 2 1 1 3 3 5
1 0 3 0 2
0 0 0 0 2 2 1 2 1
0 1 0 1 2

TABLE 6

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:90°N - 90°S, 180°W - 180°E.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:00 UTC and 12 UTC.
Level(s) monitored		:Standard levels between 1000.0 - 100.0 hPa
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored		
	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.
	:NUM LEVELS	:Number of levels satisfying selection criteria.
GROSS ERROR LIMITS	:Defined in Appendix I.2	
SELECTION CRITERIA	: ≥ 10 observations and ≥ 15 m s^{-1} RMS vector wind.	

ONLY THE STANDARD LEVEL BETWEEN 1000 - 100 hPa WITH HIGHEST RMS IS SHOWN

WMO IDENT	OBS TIME	ELM	LEV	LAT/LONG	NUM OBS	NUM GROSS	% REJ	UBIAS	VBIAS	RMS	LEVELS
EHOA	12	V	250	24/ -16	10	0	50	-21.9	-3.2	26.0	3
KCEJ	12	V	400	47/ -32	12	0	16	-2.9	6.4	15.0	1
42369	00	V	200	27/ 81	15	1	25	-4.5	-9.0	20.8	4
42369	12	V	100	27/ 81	19	1	35	13.0	-6.2	22.3	5
42379	00	V	250	27/ 83	16	0	18	-7.8	1.7	16.3	1
42397	00	V	300	27/ 88	22	1	8	-8.9	-8.0	20.9	3
42397	12	V	250	27/ 88	13	0	23	-17.3	-4.9	19.7	3
42410	12	V	250	26/ 92	15	0	20	-18.1	1.1	22.7	3
42667	12	V	150	23/ 77	10	0	10	8.4	0.6	20.2	1
47058	00	V	400	39/ 126	13	0	7	-10.1	5.9	15.6	1
56691	12	V	200	27/ 104	28	0	10	4.9	6.1	15.3	1
57816	00	V	300	26/ 107	18	0	16	2.4	-2.5	17.7	4
62019	12	V	200	31/ 17	17	0	5	-3.4	-0.8	19.0	1
62103	12	V	200	30/ 9	18	0	38	-16.6	-3.3	16.6	2
62378	00	V	100	30/ 31	14	0	14	-4.7	-1.0	15.2	1
78073	12	V	200	25/ -77	27	0	29	-15.1	6.8	15.3	1

AVAILABILITY – TEMP/PILOT – 300 HPA WIND – JANUARY 1997 FIGURE 9
ALL HOURS
10 DEGREE BOX AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS
GLOBAL AVERAGE NUMBER OF OBSERVATIONS IN 24 HOURS – 1174

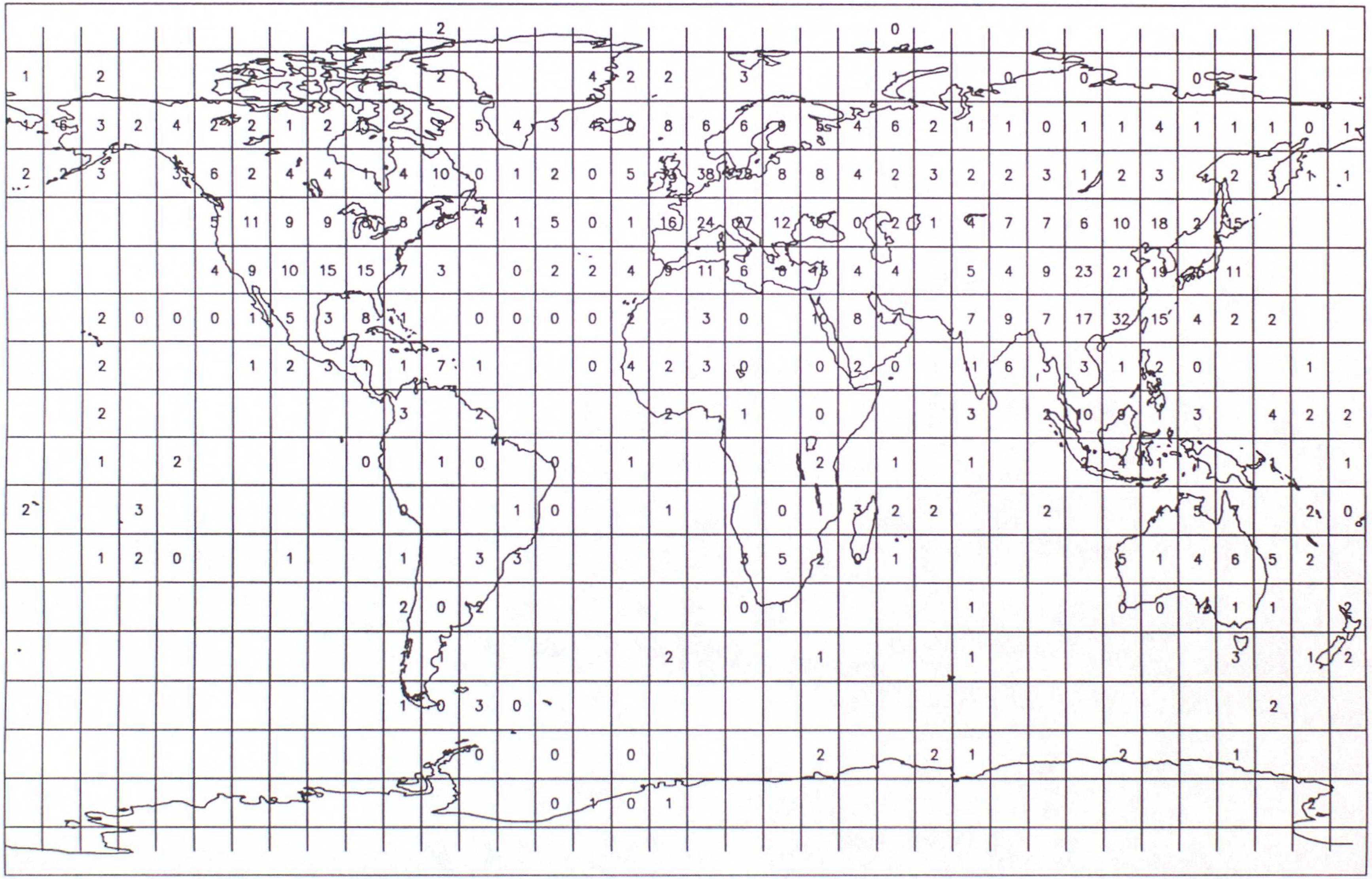

2 0
1 2 2 4 2 2 3 0 0 0
1 6 3 2 4 2 2 1 2 2 5 4 3 4 8 6 6 9 55 4 6 2 1 1 0 1 1 4 1 1 1 0 1
2 2 3 3 6 2 4 4 1 4 10 0 1 2 0 5 33 38 28 8 8 4 2 3 2 2 3 1 2 3 4 2 3 1 1
5 11 9 9 0 8 4 1 5 0 1 16 24 27 12 16 0 2 1 4 7 7 6 10 18 2 15
4 9 10 15 15 7 3 0 2 2 4 9 11 6 8 45 4 4 5 4 9 23 21 19 20 11
2 0 0 0 1 5 3 8 1 0 0 0 0 2 3 0 10 8 7 7 9 7 17 32 15 4 2 2
2 1 2 3 1 1 7 1 0 4 2 3 0 0 2 0 1 6 3 3 1 2 0 1
2 3 2 2 1 0 3 2 10 9 1 3 4 2 2
1 2 0 1 0 0 1 2 1 1 4 1 1 1
2 3 0 1 0 1 0 1 3 2 2 2 5 7 2 0
1 2 0 1 1 3 3 3 5 2 0 1 5 1 4 6 5 2
2 0 2 0 1 1 0 0 12 1 1 2
2 1 1 3 1 2
1 0 3 0 2
0 0 0 2 2 1 2 1
0 1 0 1

TABLE 7

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :90°N - 90°S, 180°W - 180°E.

Standard of comparison :Background field from Bracknell global model.

Observation times :00 UTC and 12 UTC.

Level(s) monitored :Standard levels between 500.0 - 150.0 hPa

Element monitored :WIND DIRECTION in degrees

Parameters monitored

:NUM OBS :Average number of observations at all levels.

:BIAS :Mean difference of observations from background values from all levels.

:MAX SPREAD :(For observation - background values) Maximum absolute difference of SD at any level from SD at all levels

:SD :SD of difference of observations from background values at all levels.

SELECTION CRITERIA :NUM OBS ≥ 5, and
ABSOLUTE BIAS $\geq 10°$, with
SD $< 30°$, and
MAX SPREAD $< 10°$

WMO IDENT	OBS TIME	ELM	LAT/LONG	NUM OBS	BIAS	MAX SPREAD	SD
FNOR	12	DD	18/ -59	7	-11.6	9.5	16.9
16144	12	DD	45/ 12	25	10.5	2.3	21.9
17240	00	DD	38/ 31	29	-16.3	1.8	14.4
17240	12	DD	38/ 31	28	-16.2	2.1	13.9
40265	00	DD	32/ 36	22	-11.4	5.7	14.7
40706	00	DD	38/ 46	20	-18.5	5.8	29.3
54337	12	DD	41/ 121	23	-20.9	7.5	15.1
62414	12	DD	24/ 33	29	-13.6	2.1	16.5
72476	00	DD	39/-109	24	-13.2	3.1	11.9
72476	12	DD	39/-109	25	-16.4	2.3	10.5
78073	12	DD	25/ -77	24	-12.7	4.6	21.5
96413	00	DD	1/ 110	20	-11.6	7.8	24.3
97560	00	DD	-1/ 136	12	14.2	6.7	27.1
97560	12	DD	-1/ 136	10	12.5	5.0	19.6

MONITORING OF SATELLITE WINDS

MONITORING CENTRE: BRACKNELL

MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from GOES, METEOSAT, GMS, INSAT.

Standard of comparison :Background field from Bracknell global model.

Selection Criteria :number of observations > 10.

Data Extracted :Layer 701 - 1000 hPa
401 - 700 hPa
101 - 400 hPa

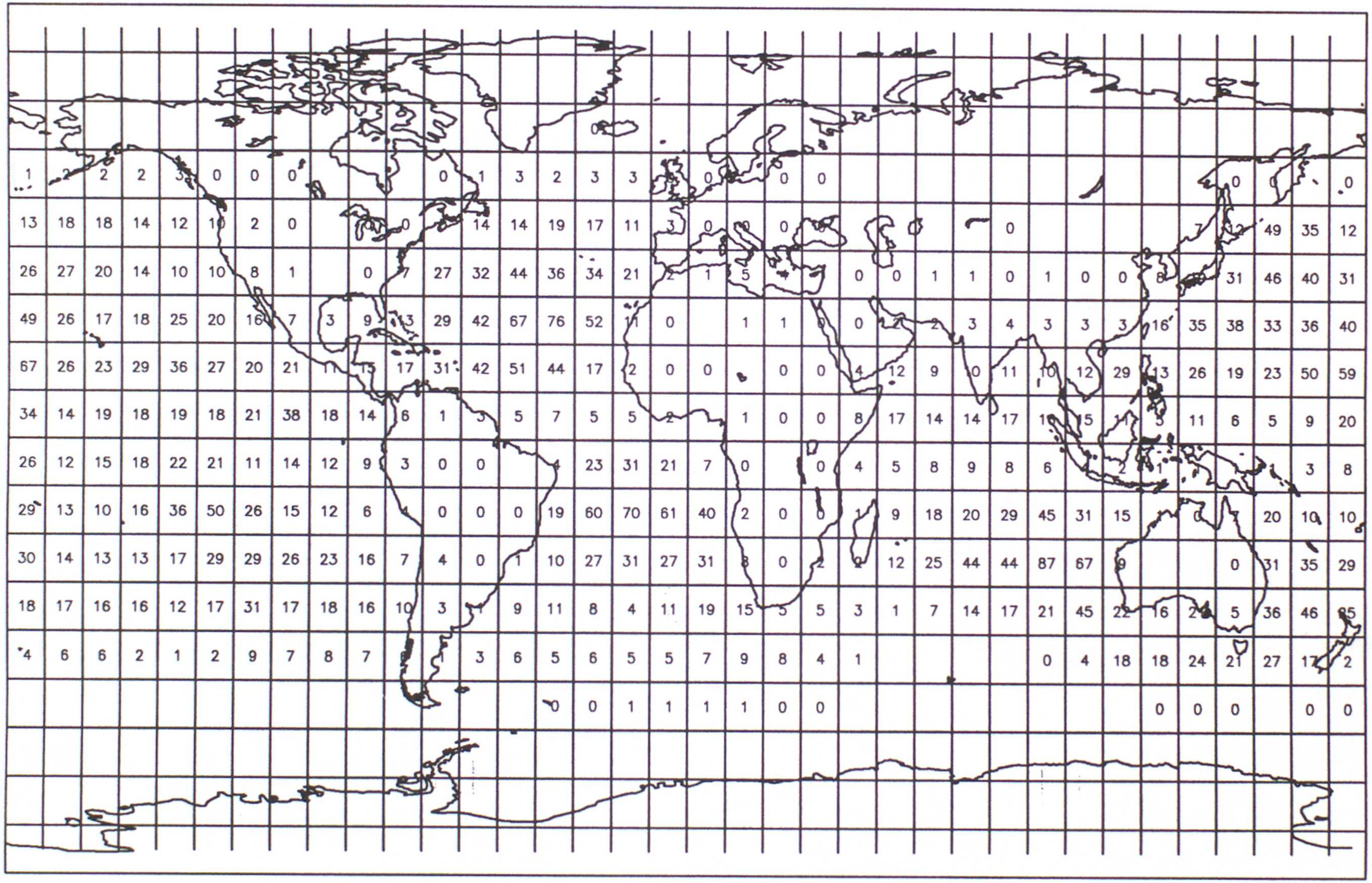
:Mean wind

:Mean observation minus background vector wind differences

:Mean observation minus background speed differences

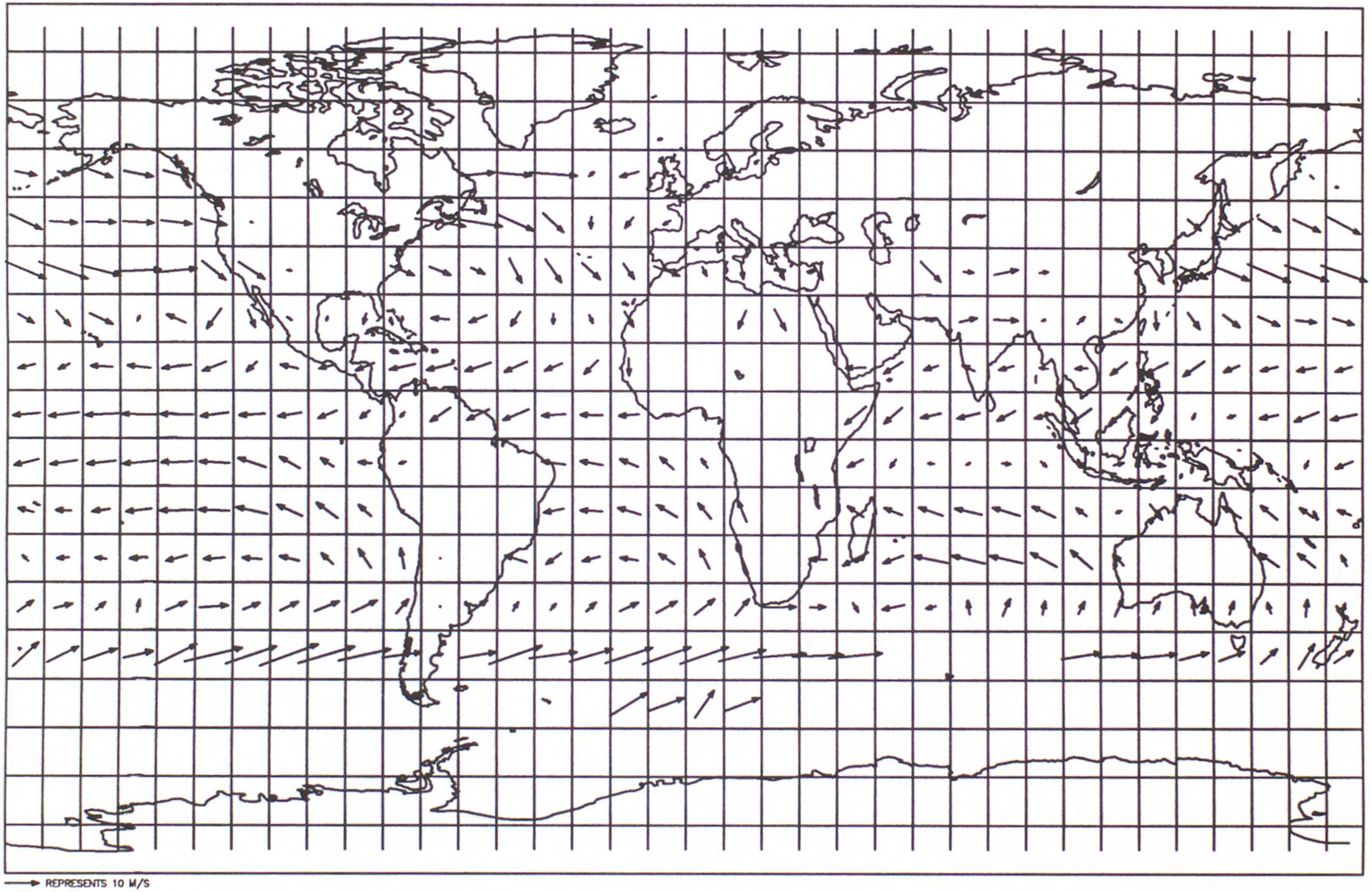
:RMS of observation minus background vector differences

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 701 AND 1000 HPA FIGURE 10
JANUARY 1997


0
1 2 2 2 3 0 0 0 0 1 3 2 3 3 0 0 0 0 0 0 0
13 18 18 14 12 10 2 0 0 0 14 14 19 17 11 3 0 0 0 0 0 7 12 49 35 12
26 27 20 14 10 10 8 1 0 7 27 32 44 36 34 21 2 1 5 0 0 1 1 0 1 0 0 8 31 46 40 31
49 26 17 18 25 20 16 7 3 9 13 29 42 67 76 52 11 0 1 1 0 0 2 2 3 4 3 3 3 16 35 38 33 36 40
67 26 23 29 36 27 20 21 11 15 17 31 42 51 44 17 2 0 0 0 0 4 12 9 0 11 10 12 29 13 26 19 23 50 59
34 14 19 18 19 18 21 38 18 14 6 1 3 5 7 5 5 2 1 0 0 8 17 14 14 17 18 15 11 5 11 6 5 9 20
26 12 15 18 22 21 11 14 12 9 3 0 0 4 23 31 21 7 0 0 4 5 8 9 8 6 4 2 1 1 3 8
29 13 10 16 36 50 26 15 12 6 4 0 0 0 19 60 70 61 40 2 0 0 1 9 18 20 29 45 31 15 1 0 7 20 10 10
30 14 13 13 17 29 29 26 23 16 7 4 0 1 10 27 31 27 31 8 0 2 2 12 25 44 44 87 67 9 0 31 35 29
18 17 16 16 12 17 31 17 18 16 10 3 1 9 11 8 4 11 19 15 5 5 3 1 7 14 17 21 45 22 16 24 5 36 46 85
4 6 6 2 1 2 9 7 8 7 8 1 3 6 5 6 5 5 7 9 8 4 1 0 4 18 18 24 21 27 17 2
0 0 1 1 1 1 0 0 0 0 0 0 0

SATOB VECTOR MEAN WINDS BETWEEN 701–1000 HPA
JANUARY 1997
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 11


REPRESENTS 10 M/S

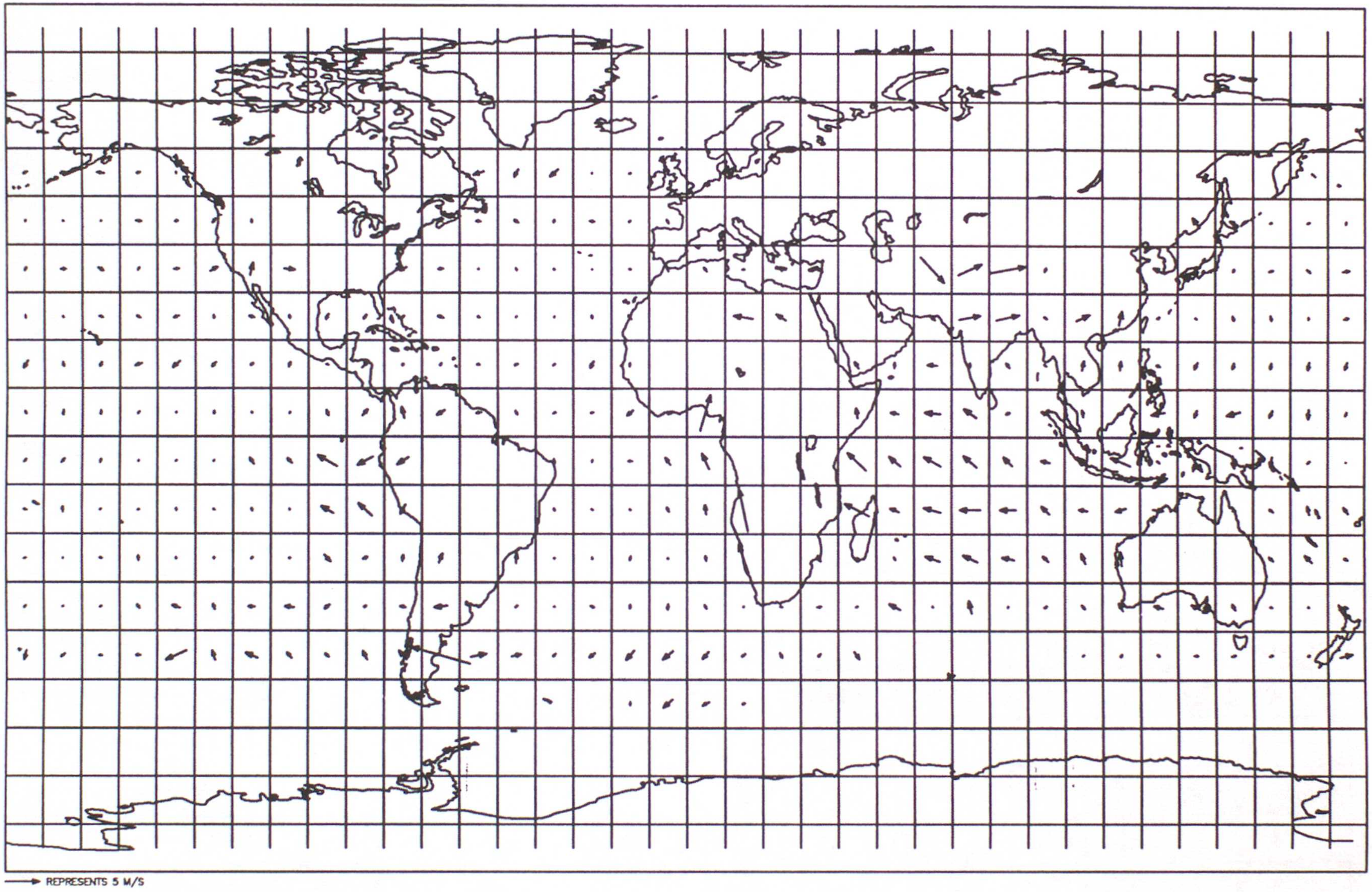
SATOB O−B VECTOR WIND DIFFERENCES BETWEEN 701−1000 HPA

FIGURE 12

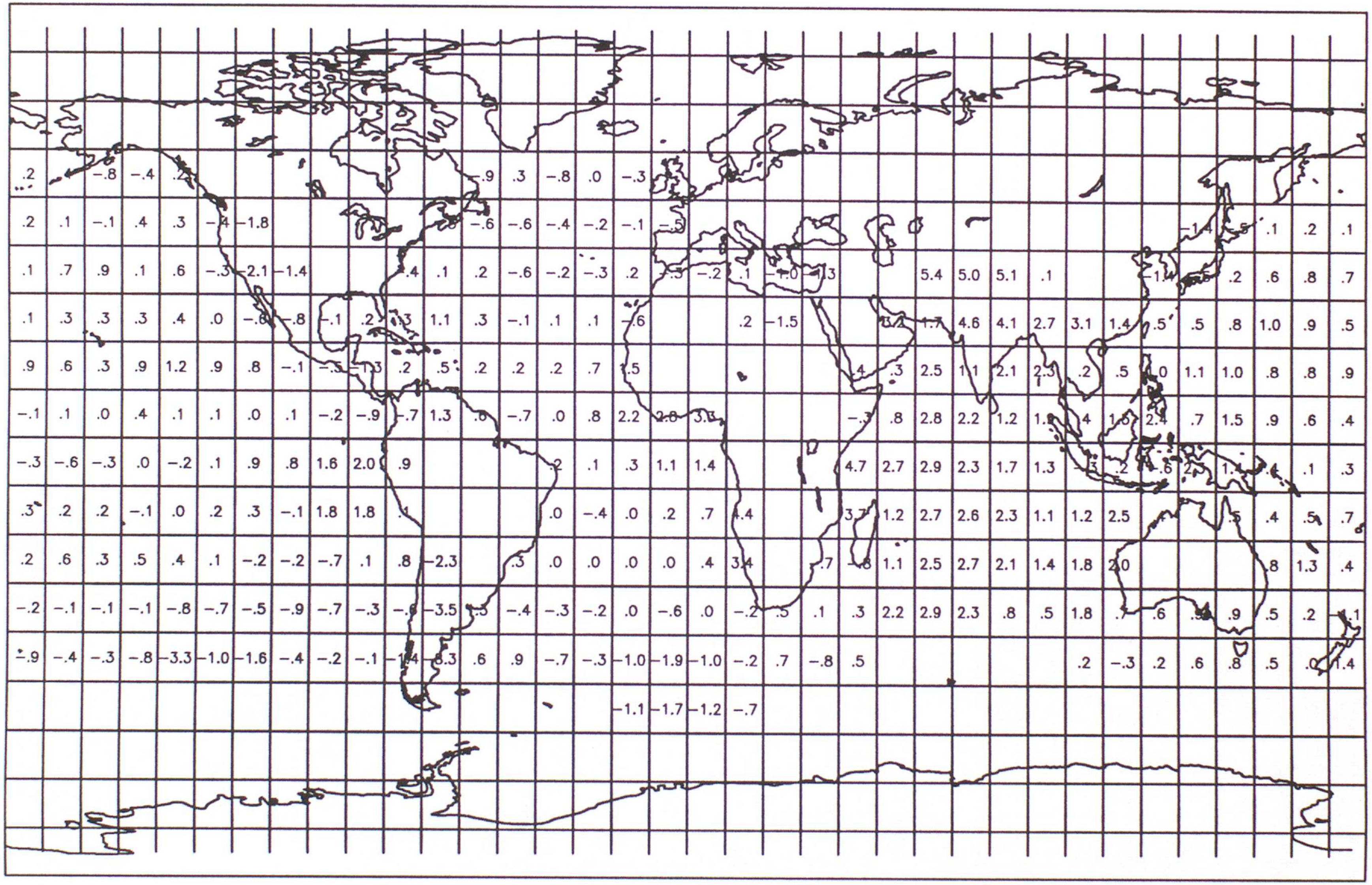
JANUARY 1997

ALL OBSERVATIONS

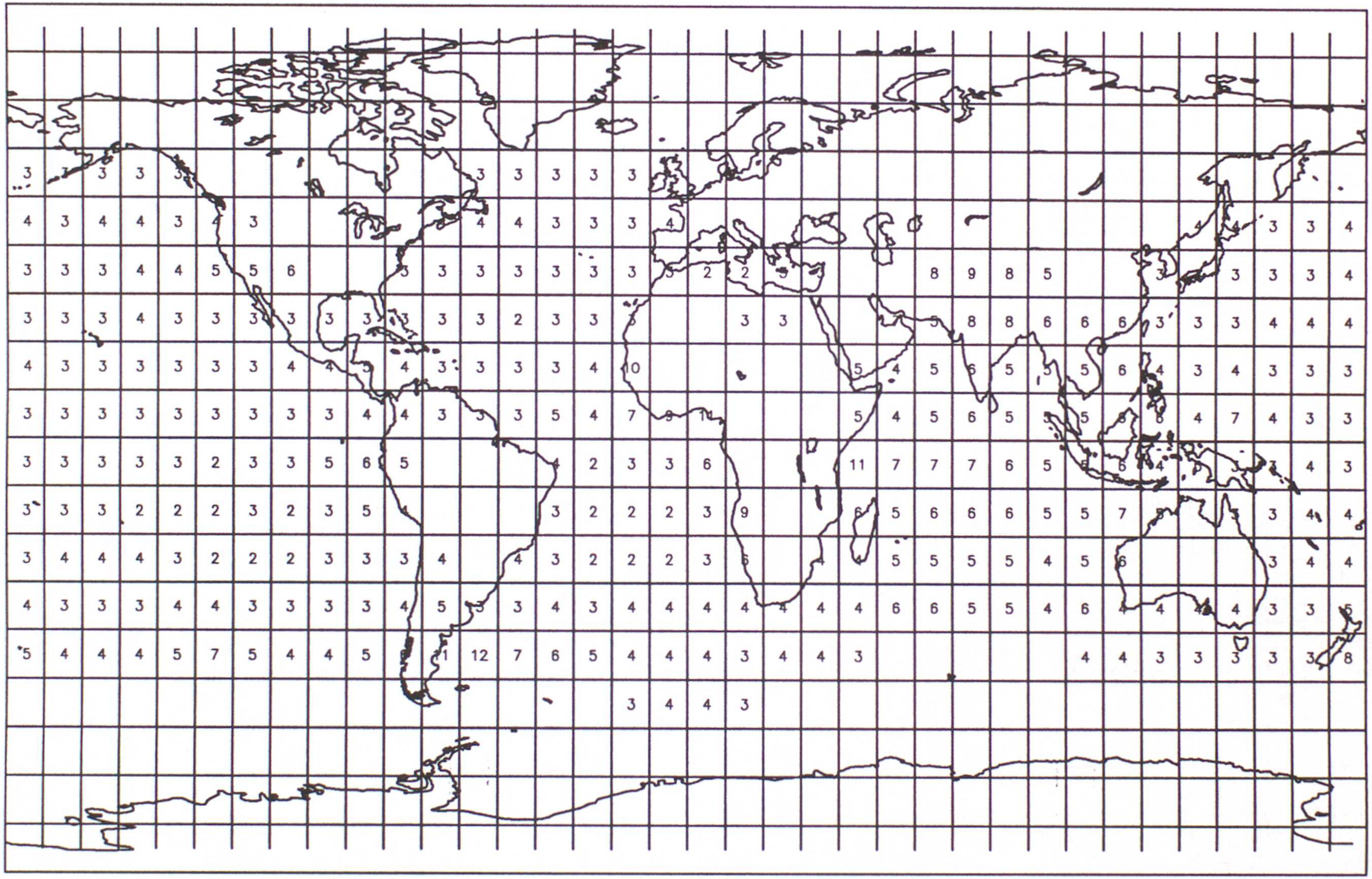
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



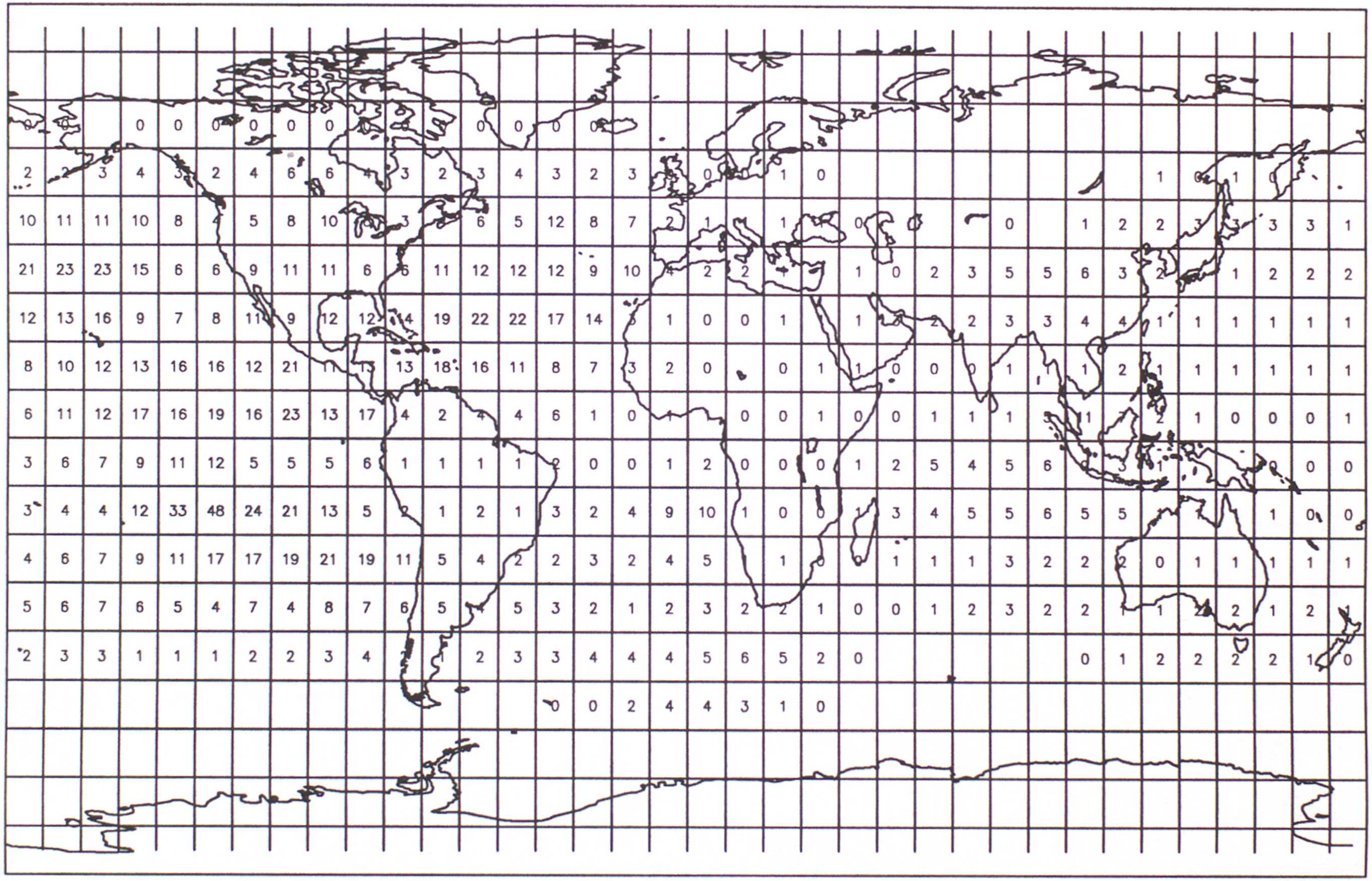
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 13
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


.2 -.8 -.4 .2 -.9 .3 -.8 .0 -.3
.2 .1 -.1 .4 .3 -.4 -1.8 -.6 -.6 -.4 -.2 -.1 -.5 -1.4 -.5 .1 .2 .1
.1 .7 .9 .1 .6 -.3 -2.1 -1.4 .4 .1 .2 -.6 -.2 -.3 .2 -.3 -.2 .1 -1.0 -1.3 5.4 5.0 5.1 .1 -1.4 -.5 .2 .6 .8 .7
.1 .3 .3 .3 .4 .0 -.6 -.8 -.1 .2 .3 1.1 .3 -.1 .1 .1 -.6 .2 -1.5 3.2 1.7 4.6 4.1 2.7 3.1 1.4 .5 .5 .8 1.0 .9 .5
.9 .6 .3 .9 1.2 .9 .8 -.1 -.5 -1.3 .2 .5 .2 .2 .2 .7 1.5 .4 .3 2.5 1.1 2.1 2.3 .2 .5 1.0 1.1 1.0 .8 .8 .9
-.1 .1 .0 .4 .1 .1 .0 .1 -.2 -.9 -.7 1.3 .6 -.7 .0 .8 2.2 2.8 3.3 -.3 .8 2.8 2.2 1.2 1.8 .4 1.6 2.4 .7 1.5 .9 .6 .4
-.3 -.6 -.3 .0 -.2 .1 .9 .8 1.6 2.0 .9 .2 .1 .3 1.1 1.4 4.7 2.7 2.9 2.3 1.7 1.3 -.3 .2 -.6 2.5 1.1 .4 .1 .3
.3 .2 .2 -.1 .0 .2 .3 -.1 1.8 1.8 .1 .0 -.4 .0 .2 .7 1.4 3.7 1.2 2.7 2.6 2.3 1.1 1.2 2.5 .4 .5 .4 .5 .7
.2 .6 .3 .5 .4 .1 -.2 -.2 -.7 .1 .8 -2.3 .3 .0 .0 .0 .0 .4 3.4 -.7 -.8 1.1 2.5 2.7 2.1 1.4 1.8 2.0 .8 1.3 .4
-.2 -.1 -.1 -.1 -.8 -.7 -.5 -.9 -.7 -.3 -.6 -3.5 1.5 -.4 -.3 -.2 .0 -.6 .0 -.2 .5 .1 .3 2.2 2.9 2.3 .8 .5 1.8 .7 .6 .5 .9 .5 .2 -1.1
-.9 -.4 -.3 -.8 -3.3 -1.0 -1.6 -.4 -.2 -.1 -1.4 -3.3 .6 .9 -.7 -.3 -1.0 -1.9 -1.0 -.2 .7 -.8 .5 .2 -.3 .2 .6 .8 .5 .0 1.4
-1.1 -1.7 -1.2 -.7

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 701 AND 1000 HPA FIGURE 14
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT

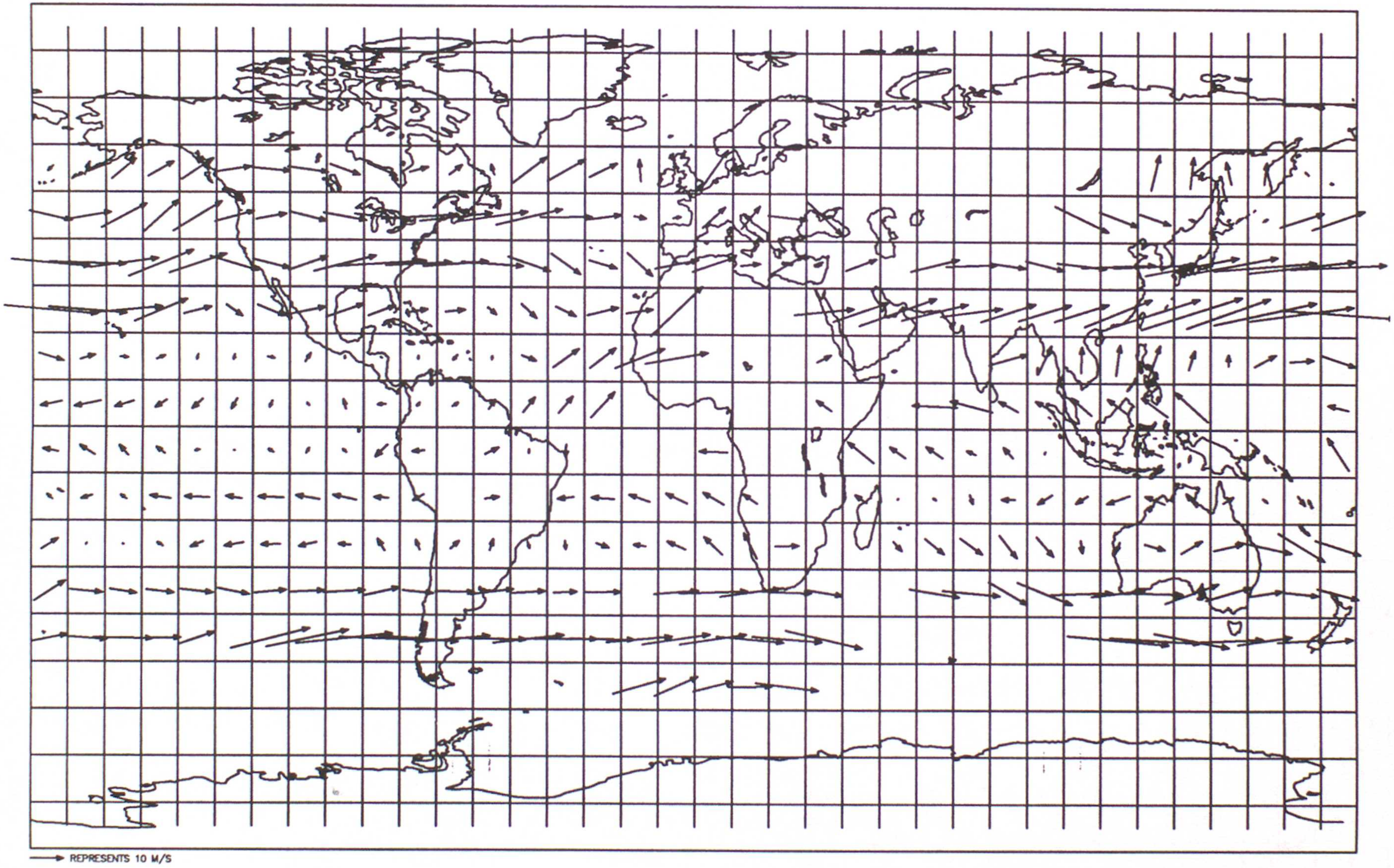

3 3 3 3 3 3 3 3 3 3 3
4 3 4 4 3 4 3 4 4 3 3 3 4 4 4 3 3 4
3 3 3 4 4 5 5 6 3 3 3 3 3 3 3 3 2 2 3 3 8 9 8 5 3 3 3 3 4
3 3 3 4 3 3 3 3 3 3 3 3 3 2 3 3 5 3 3 5 8 8 6 6 6 3 3 3 4 4 4
4 3 3 3 3 3 3 4 4 5 4 3 3 3 3 4 10 5 4 5 6 5 5 5 6 4 3 4 3 3 3
3 3 3 3 3 3 3 3 3 4 4 3 3 3 5 4 7 9 11 5 4 5 6 5 5 5 6 6 4 7 4 3 3
3 3 3 3 3 2 3 3 5 6 5 4 2 3 3 6 11 7 7 7 6 5 5 6 4 5 3 3 4 3
3 3 3 2 2 2 3 2 3 5 4 3 2 2 2 3 9 6 5 6 6 6 5 5 7 5 3 3 4 4
3 4 4 4 3 2 2 2 3 3 3 4 4 3 2 2 2 3 6 4 4 5 5 5 5 4 5 6 3 4 4
4 3 3 3 4 4 3 3 3 3 4 5 3 3 4 3 4 4 4 4 4 4 4 6 6 5 5 4 6 4 4 4 4 3 3 5
5 4 4 4 5 7 5 4 4 5 6 11 12 7 6 5 4 4 4 3 4 4 3 4 4 3 3 3 3 3 8
3 4 4 3

AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 401 AND 700 HPA FIGURE 15
JANUARY 1997


0 0 0 0 0 0 0 0 0 0 0 0 0 0
2 2 3 4 3 2 4 6 6 4 3 2 3 4 3 2 3 3 0 1 0 1 0 1 0
10 11 11 10 8 4 5 8 10 3 6 5 12 8 7 2 1 1 1 1 0 0 1 2 2 3 3 3 3 1
21 23 23 15 6 6 9 11 11 6 6 11 12 12 12 9 10 4 2 2 1 1 0 2 3 5 5 6 3 2 1 2 2 2
12 13 16 9 7 8 11 9 12 12 14 19 22 22 17 14 3 1 0 0 1 1 2 2 3 3 4 4 1 1 1 1 1 1
8 10 12 13 16 16 12 21 11 13 13 18 16 11 8 7 3 2 0 0 1 1 0 0 0 1 1 1 2 1 1 1 1 1 1
6 11 12 17 16 19 16 23 13 17 4 2 4 4 6 1 0 1 0 0 1 0 0 1 1 1 3 1 1 2 1 0 0 0 1
3 6 7 9 11 12 5 5 5 6 1 1 1 1 2 0 0 1 2 0 0 0 1 2 5 4 5 6 0 3 1 0 0 0
3 4 4 12 33 48 24 21 13 5 2 1 2 1 3 2 4 9 10 1 0 0 1 3 4 5 5 6 5 5 1 1 1 0 0
4 6 7 9 11 17 17 19 21 19 11 5 4 2 2 3 2 4 5 1 0 0 1 1 1 3 2 2 2 0 1 1 1 1 1
5 6 7 6 5 4 7 4 8 7 6 5 4 5 3 2 1 2 3 2 2 1 0 0 1 2 3 2 2 1 1 2 2 1 2 1
2 3 3 1 1 1 2 2 3 4 2 1 2 3 3 4 4 4 5 6 5 2 0 0 1 2 2 2 2 1 0
0 0 2 4 4 3 1 0

SATOB VECTOR MEAN WINDS BETWEEN 401–700 HPA
JANUARY 1997
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 16


REPRESENTS 10 M/S

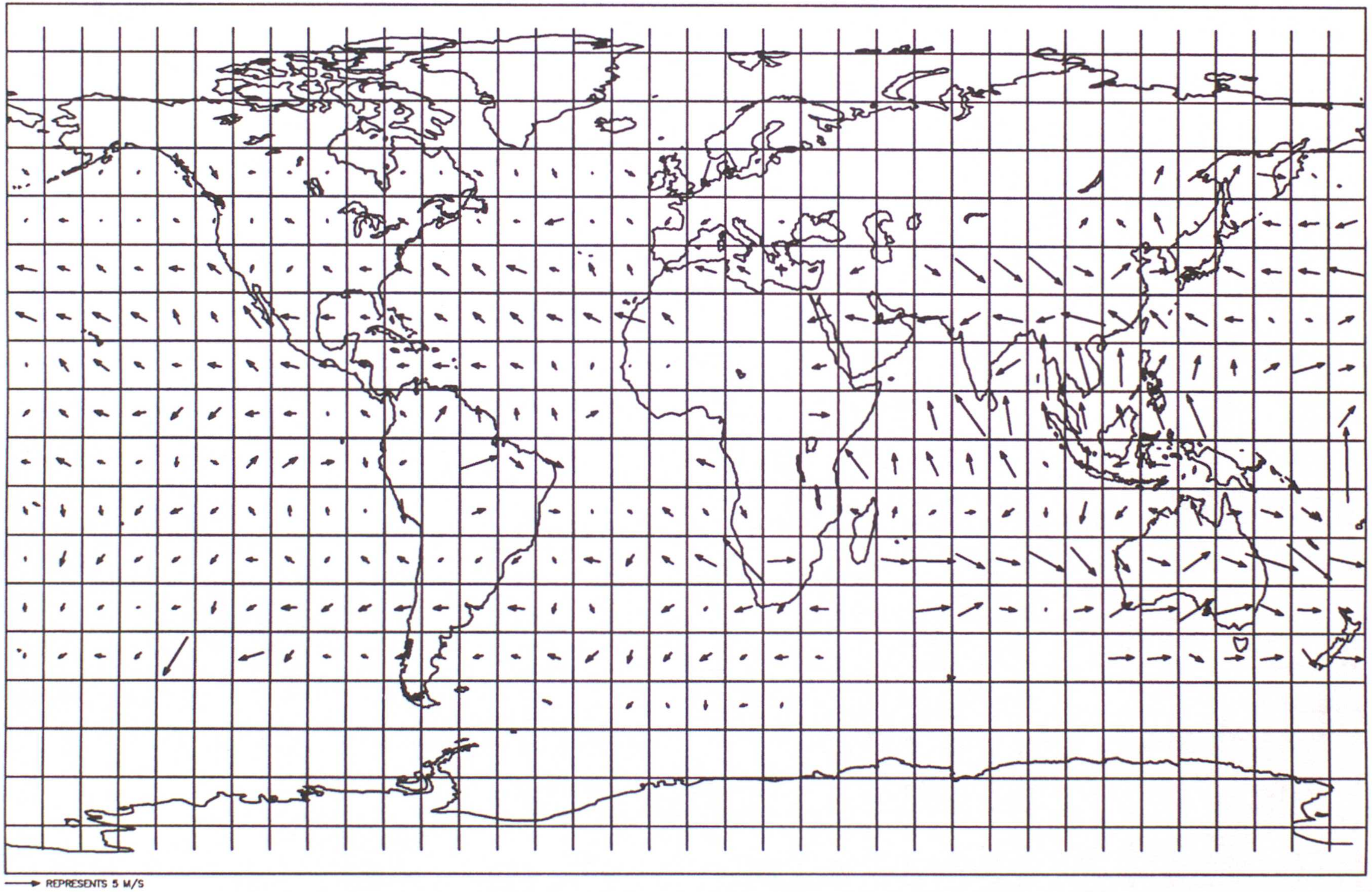
SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 401-700 HPA

FIGURE 17

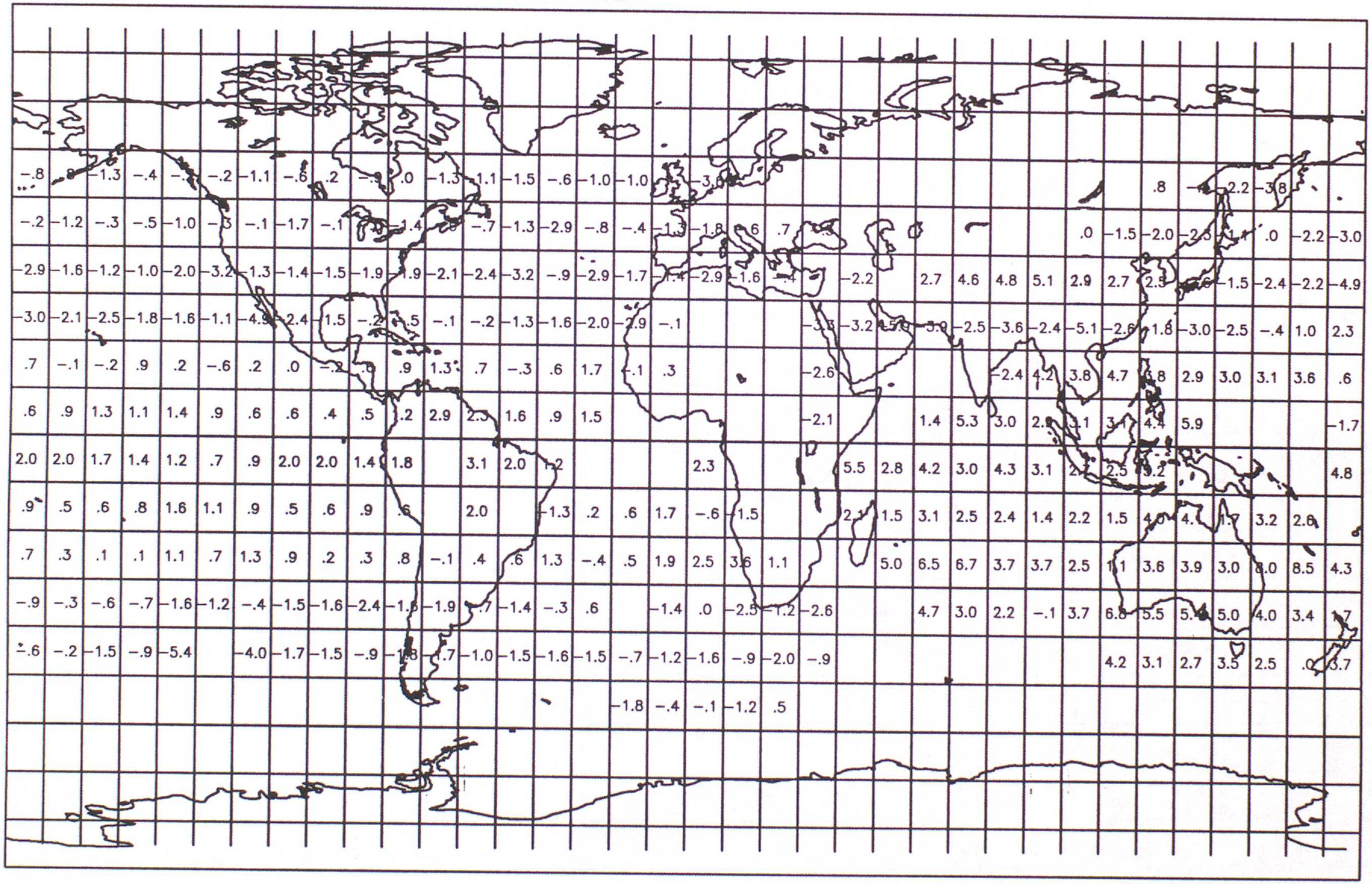
JANUARY 1997

ALL OBSERVATIONS

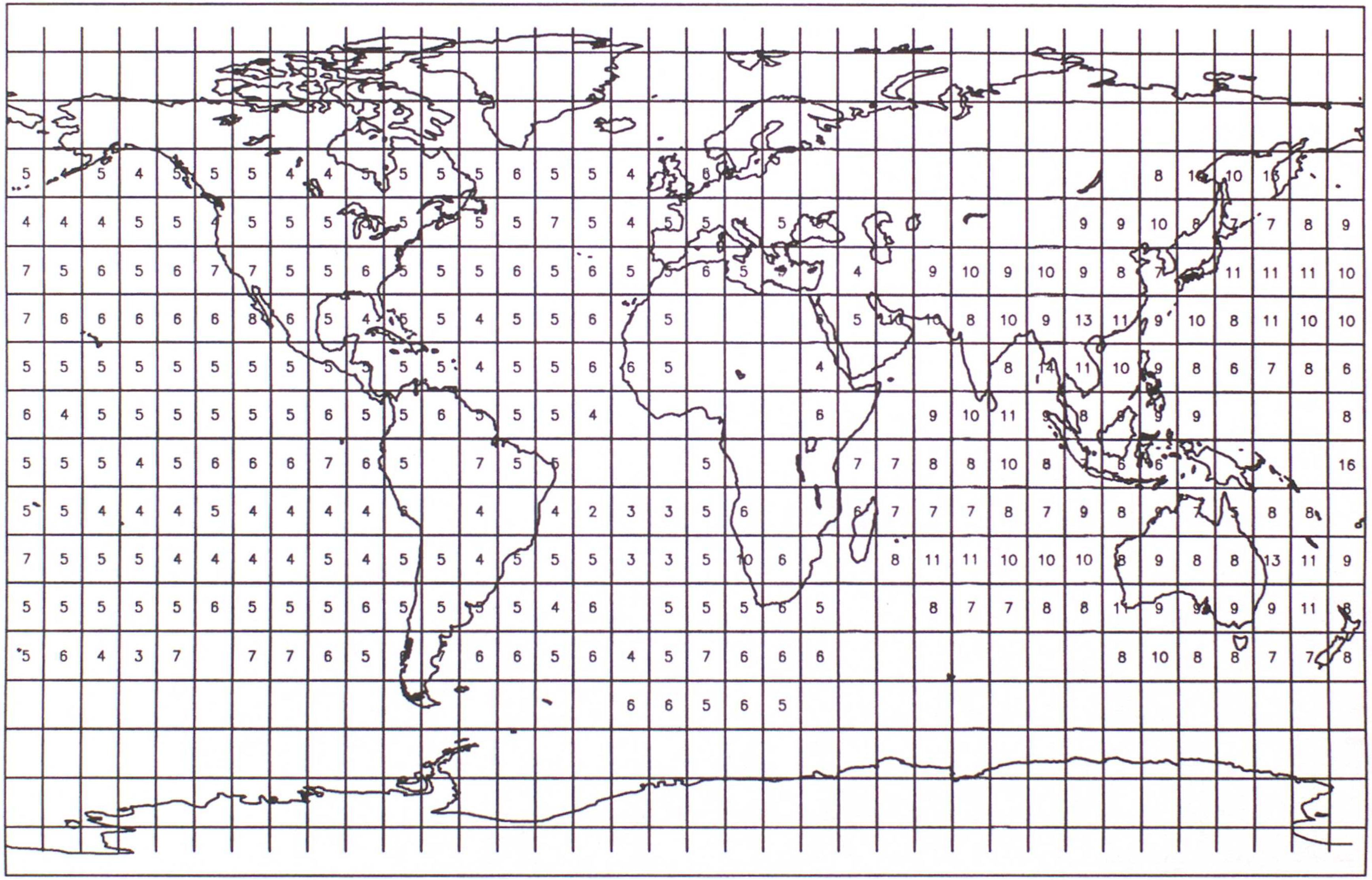
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT



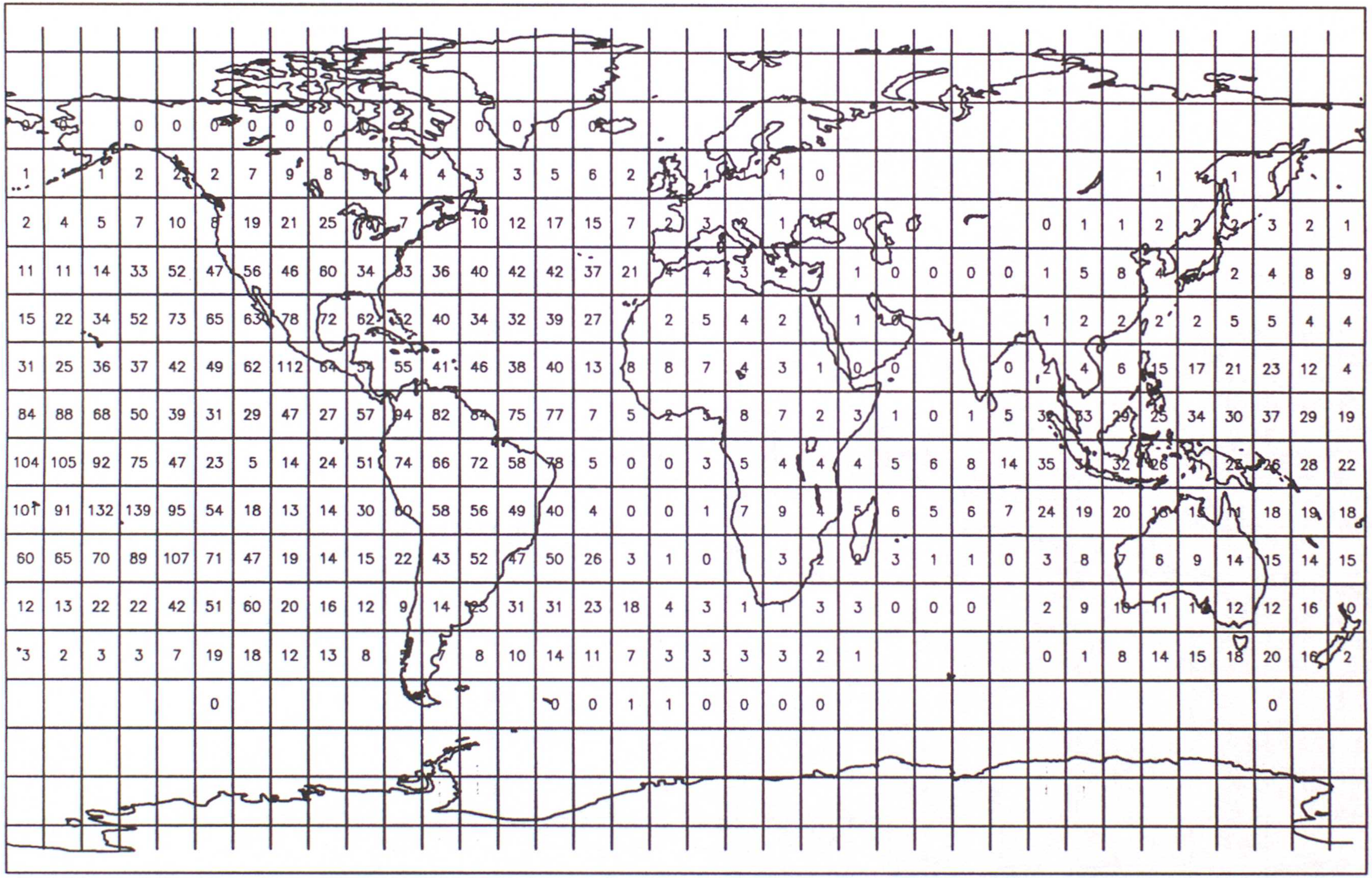
SATOBS : MEAN O-B SPEED DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 18
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


-.8 .8 -1.3 -.4 -.2 -1.1 -.6 .2 .0 -1.3 1.1 -1.5 -.6 -1.0 -1.0 -3.0 .8 2.2 -3.8
-.2 -1.2 -.3 -.5 -1.0 -.3 -.1 -1.7 -.1 -1.4 -.7 -1.3 -2.9 -.8 -.4 -1.3 -1.8 .6 .7 .0 -1.5 -2.0 -2.3 .0 -2.2 -3.0
-2.9 -1.6 -1.2 -1.0 -2.0 -3.2 -1.3 -1.4 -1.5 -1.9 -1.9 -2.1 -2.4 -3.2 -.9 -2.9 -1.7 -1.4 -2.9 -1.6 -2.2 2.7 4.6 4.8 5.1 2.9 2.7 2.5 -1.5 -2.4 -2.2 -4.9
-3.0 -2.1 -2.5 -1.8 -1.6 -1.1 -4.9 -2.4 -1.5 -.2 -.5 -.1 -.2 -1.3 -1.6 -2.0 -2.9 -.1 -3.2 -2.5 -3.6 -2.4 -5.1 -2.6 1.8 -3.0 -2.5 -.4 1.0 2.3
.7 -.1 -.2 .9 .2 -.6 .2 .0 -.2 .9 1.3 .7 -.3 .6 1.7 -.1 .3 -2.6 -2.4 4.2 3.8 4.7 .8 2.9 3.0 3.1 3.6 .6
.6 .9 1.3 1.1 1.4 .9 .6 .6 .4 .5 .2 2.9 2.3 1.6 .9 1.5 -2.1 1.4 5.3 3.0 2.9 3.1 3.1 4.4 5.9 -1.7
2.0 2.0 1.7 1.4 1.2 .7 .9 2.0 2.0 1.4 1.8 3.1 2.0 1.2 2.3 5.5 2.8 4.2 3.0 4.3 3.1 2.5 3.2 4.8
.9 .5 .6 .8 1.6 1.1 .9 .5 .6 .9 .6 2.0 -1.3 .2 .6 1.7 -.6 1.5 2.1 1.5 3.1 2.5 2.4 1.4 2.2 1.5 4.0 4.1 1.7 3.2 2.6
.7 .3 .1 .1 1.1 .7 1.3 .9 .2 .3 .8 -.1 .4 .6 1.3 -.4 .5 1.9 2.5 3.6 1.1 5.0 6.5 6.7 3.7 3.7 2.5 1.1 3.6 3.9 3.0 8.0 8.5 4.3
-.9 -.3 -.6 -.7 -1.6 -1.2 -.4 -1.5 -1.6 -2.4 -1.5 -1.9 -.7 -1.4 -.3 .6 -1.4 .0 -2.5 -1.2 -2.6 4.7 3.0 2.2 -.1 3.7 6.8 5.5 5.4 5.0 4.0 3.4 1.7
-.6 -.2 -1.5 -.9 -5.4 -4.0 -1.7 -1.5 -.9 -1.8 -.7 -1.0 -1.5 -1.6 -1.5 -.7 -1.2 -1.6 -.9 -2.0 -.9 4.2 3.1 2.7 3.5 2.5 .0 3.7
-1.8 -.4 -.1 -1.2 .5

SATOBS : RMS O–B VECTOR DIFFERENCES (M/S) BETWEEN 401 AND 700 HPA FIGURE 19
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


5 5 4 5 5 5 4 4 5 5 5 5 6 5 5 4 6 8 16 10 16
4 4 4 5 5 4 5 5 5 5 5 5 5 7 5 4 5 5 4 5 6 9 9 10 8 7 7 8 9
7 5 6 5 6 7 7 5 5 6 5 5 5 6 5 6 5 5 6 5 5 4 9 10 9 10 9 8 7 11 11 11 10
7 6 6 6 6 6 8 6 5 4 5 5 4 5 5 6 7 5 6 5 10 10 8 10 9 13 11 9 10 8 11 10 10
5 5 5 5 5 5 5 5 5 5 5 5 4 5 5 6 6 5 4 8 14 11 10 9 8 6 7 8 6
6 4 5 5 5 5 5 5 6 5 5 6 5 5 5 4 6 9 10 11 9 8 8 9 9 8
5 5 5 4 5 6 6 6 7 6 5 7 5 5 5 7 7 8 8 10 8 7 6 6 16
5 5 4 4 4 5 4 4 4 4 6 4 4 2 3 3 5 6 6 7 7 7 8 7 9 8 9 7 5 8 8
7 5 5 5 4 4 4 4 5 4 5 5 4 5 5 5 3 3 5 10 6 8 11 11 10 10 10 8 9 8 8 13 11 9
5 5 5 5 5 6 5 5 5 6 5 5 5 5 4 6 5 5 5 6 5 8 7 7 8 8 11 9 9 9 9 11 8
5 6 4 3 7 7 7 6 5 6 7 6 6 5 6 4 5 7 6 6 6 8 10 8 8 7 7 8
6 6 5 6 5

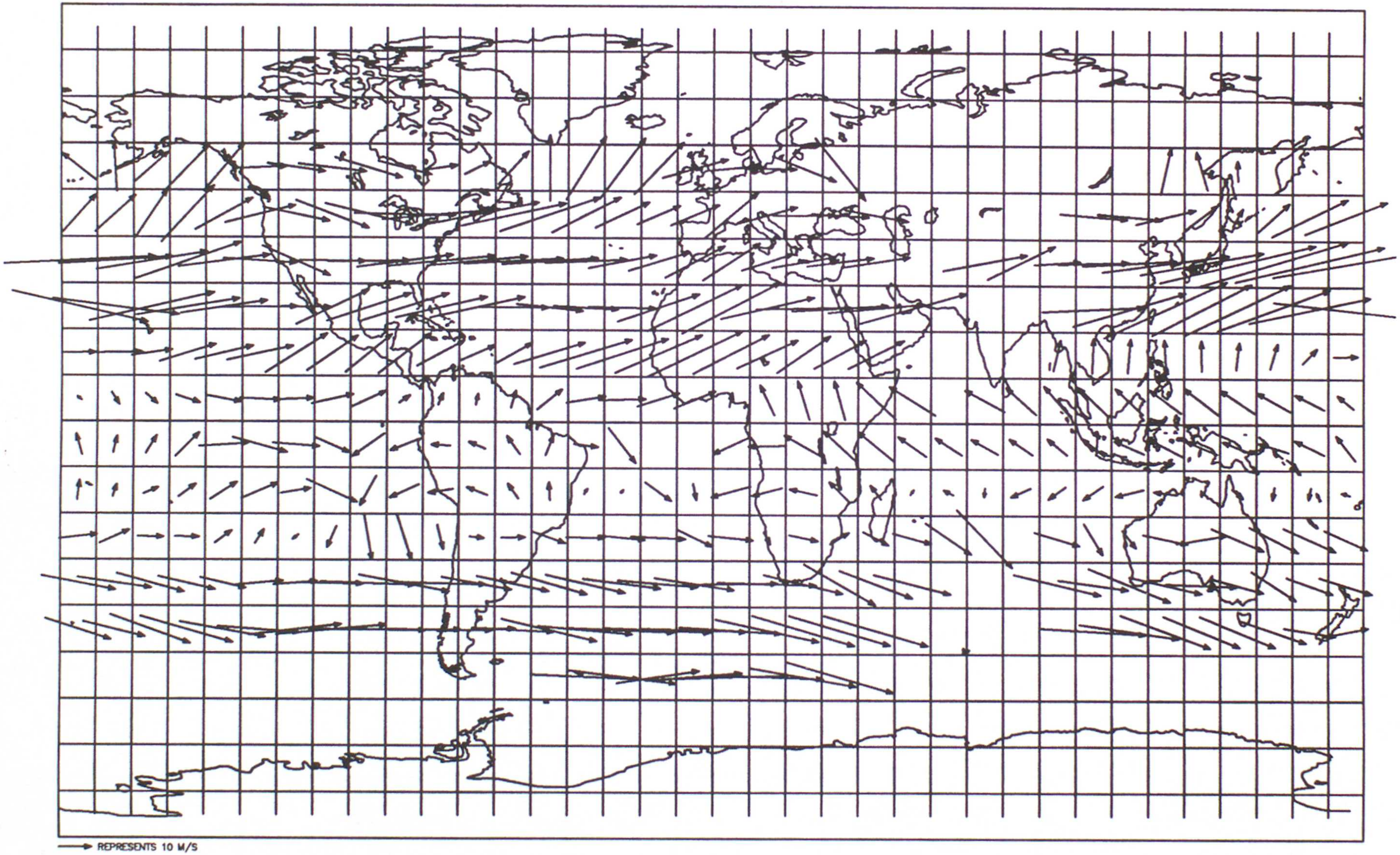
AVERAGE DAILY NUMBER OF SATOB OBSERVATIONS BETWEEN 101 AND 400 HPA FIGURE 20
JANUARY 1997



0	0		0	0	0	0	0	0				0	0	0	0																				
1	1	1	2	2	2	7	9	8	9	4	4	3	3	5	6	2		1		1	0									1	1	1	0		
2	4	5	7	10	8	19	21	25	[illegible]	7		10	12	17	15	7	2	3	2	1	1	0					0	1	1	2	2	2	3	2	1
11	11	14	33	52	47	56	46	60	34	33	36	40	42	42	37	21	4	4	3	2	[illegible]	1	0	0	0	0	1	5	8	4		2	4	8	9
15	22	34	52	73	65	63	78	72	62	52	40	34	32	39	27	4	2	5	4	2		1	0				1	2	2	2	2	5	5	4	4
31	25	36	37	42	49	62	112	64	54	55	41	46	38	40	13	8	8	7	4	3	1	0	0			0	2	4	6	15	17	21	23	12	4
84	88	68	50	39	31	29	47	27	57	94	82	84	75	77	7	5	2	3	8	7	2	3	1	0	1	5	39	33	29	25	34	30	37	29	19
104	105	92	75	47	23	5	14	24	51	74	66	72	58	78	5	0	0	3	5	4	4	4	5	6	8	14	35	31	32	26	21	23	26	28	22
101	91	132	139	95	54	18	13	14	30	60	58	56	49	40	4	0	0	1	7	9	4	5	6	5	6	7	24	19	20	16	15	11	18	19	18
60	65	70	89	107	71	47	19	14	15	22	43	52	47	50	26	3	1	0	1	3	2	2	3	1	1	0	3	8	7	6	9	14	15	14	15
12	13	22	22	42	51	60	20	16	12	9	14	25	31	31	23	18	4	3	1	1	3	3	0	0	0		2	9	10	11	14	12	12	16	10
3	2	3	3	7	19	18	12	13	8	5	7	8	10	14	11	7	3	3	3	3	2	1					0	1	8	14	15	18	20	16	2
					0									0	0	1	1	0	0	0	0												0		

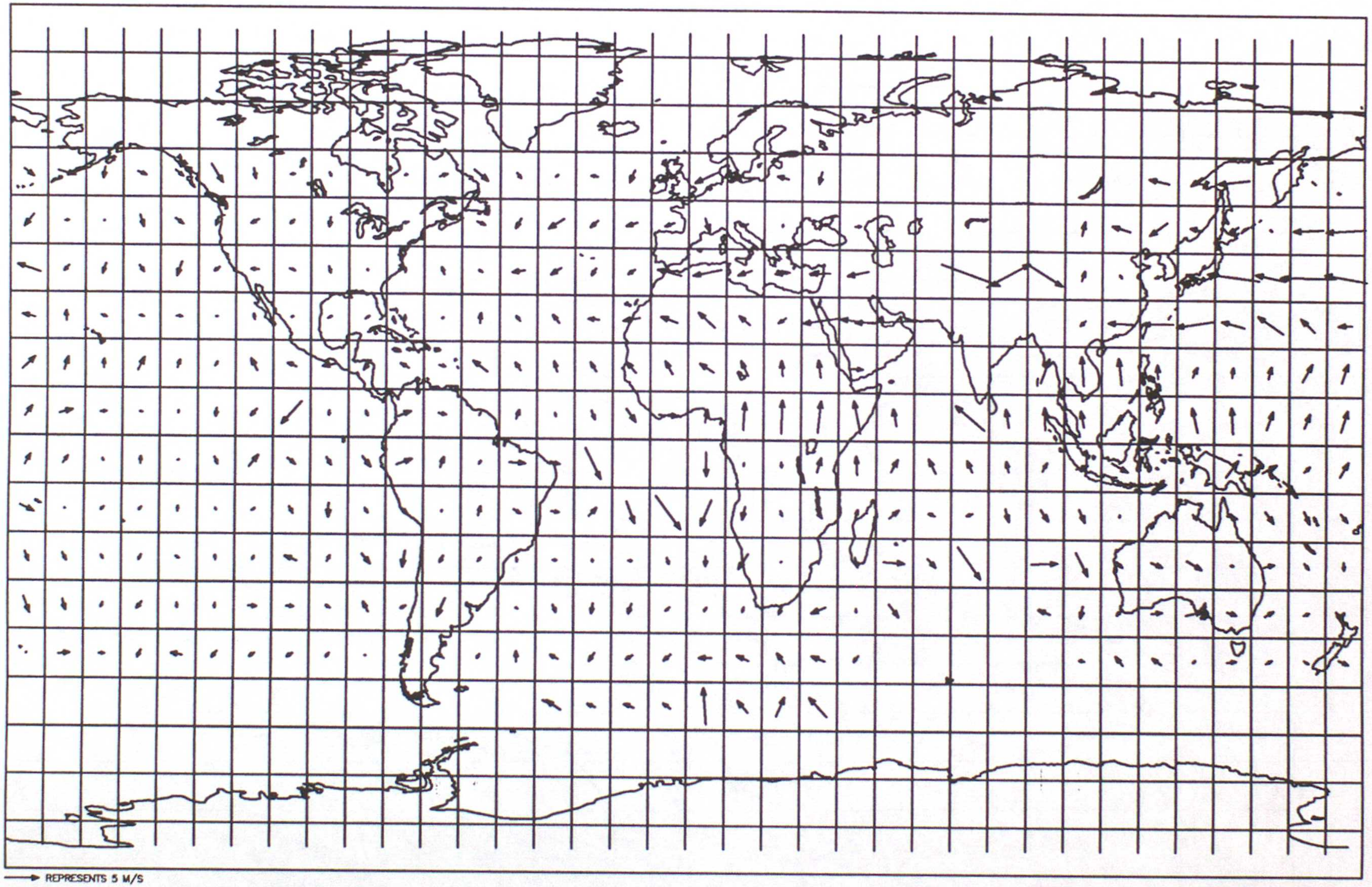
SATOB VECTOR MEAN WINDS BETWEEN 101–400 HPA
JANUARY 1997
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

FIGURE 21

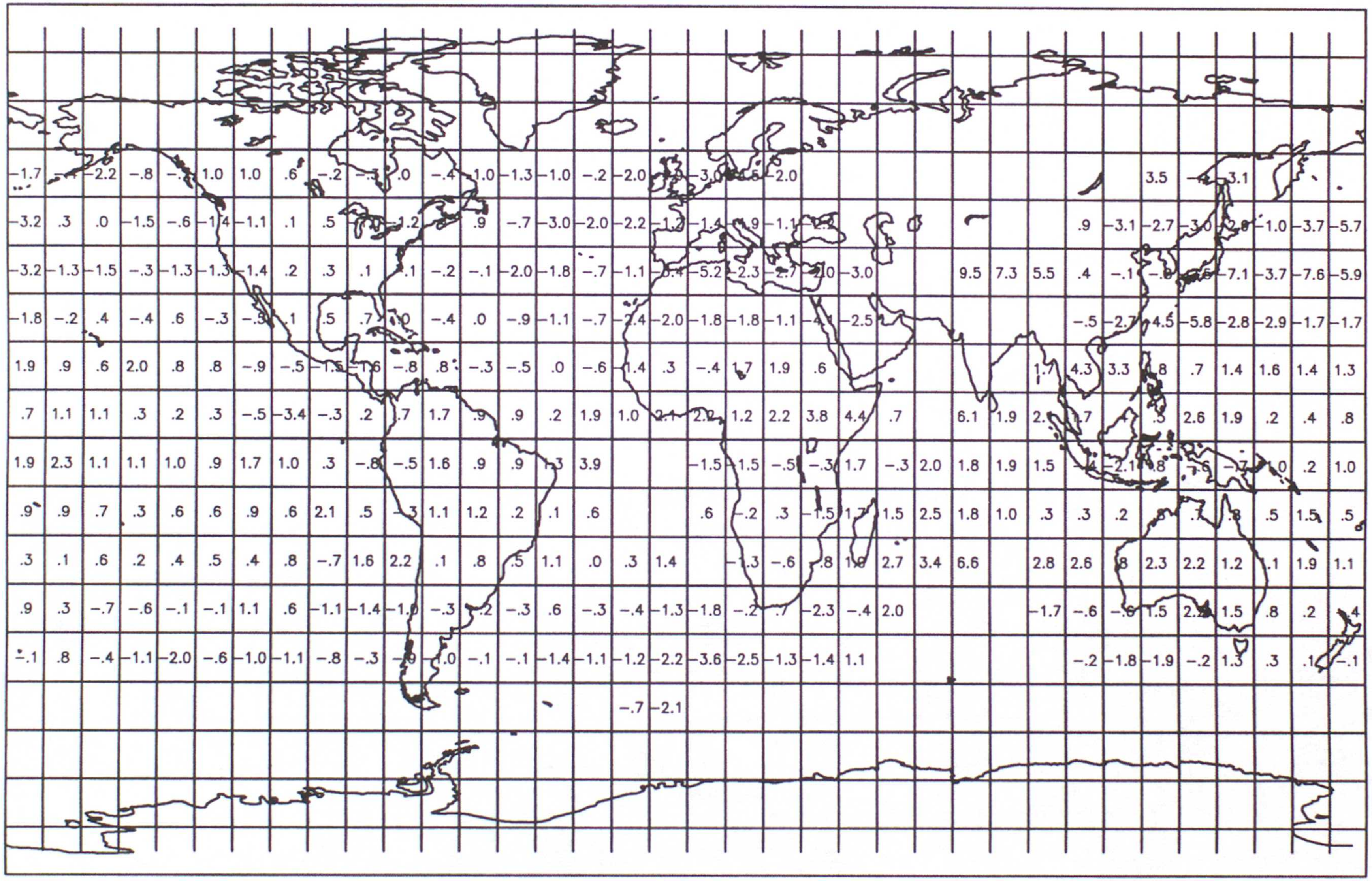

REPRESENTS 10 M/S

SATOB O-B VECTOR WIND DIFFERENCES BETWEEN 101-400 HPA
JANUARY 1997
ALL OBSERVATIONS
ARROWS PLOTTED WHERE MORE THAN 10 OBS ARE PRESENT

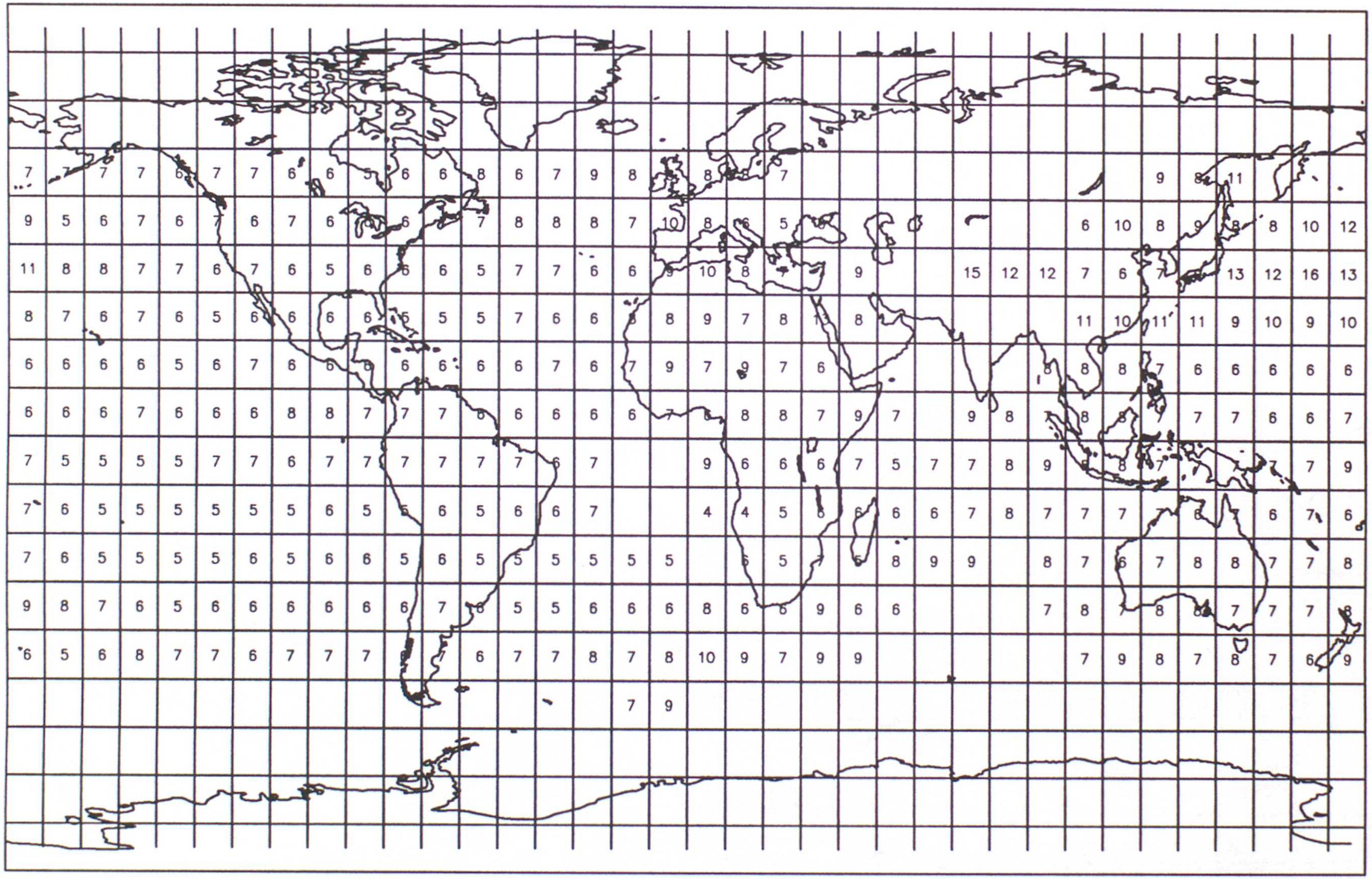
FIGURE 22



SATOBS : MEAN O–B SPEED DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 23
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


–1.7 –2.2 –.8 1.0 1.0 .6 –.2 .0 –.4 1.0 –1.3 –1.0 –.2 –2.0 –3.0 –2.0 3.5 –3.1
–3.2 .3 .0 –1.5 –.6 –1.1 .1 .5 –1.2 .9 –.7 –3.0 –2.0 –2.2 –1.4 –1.1 .9 –3.1 –2.7 –1.0 –3.7 –5.7
–3.2 –1.3 –1.5 –.3 –1.3 –1.4 .2 .3 .1 .1 –.2 –.1 –2.0 –1.8 –.7 –1.1 –5.2 –2.3 –3.0 9.5 7.3 5.5 .4 –.1 –7.1 –3.7 –7.6 –5.9
–1.8 –.2 .4 –.4 .6 –.3 .1 .5 .7 –.4 .0 –.9 –1.1 –.7 –2.0 –1.8 –1.8 –1.1 –2.5 –.5 4.5 –5.8 –2.8 –2.9 –1.7 –1.7
1.9 .9 .6 2.0 .8 .8 –.9 –.5 –.8 .8 –.3 –.5 .0 –.6 .3 –.4 1.9 .6 1.7 4.3 3.3 .7 1.4 1.6 1.4 1.3
.7 1.1 1.1 .3 .2 .3 –.5 –3.4 –.3 .2 1.7 .9 .2 1.9 1.0 1.2 2.2 3.8 4.4 .7 6.1 1.9 2.6 1.9 .2 .4 .8
1.9 2.3 1.1 1.1 1.0 .9 1.7 1.0 .3 –.5 1.6 .9 .9 3.9 –1.5 –1.5 1.7 –.3 2.0 1.8 1.9 1.5 –2.1 .2 1.0
.9 .9 .7 .3 .6 .6 .9 .6 2.1 .5 1.1 1.2 .2 .1 .6 .6 .3 1.5 2.5 1.8 1.0 .3 .3 .2 .5 .5
.3 .1 .6 .2 .4 .5 .4 .8 –.7 1.6 2.2 .1 .8 .5 1.1 .0 .3 1.4 –.6 2.7 3.4 6.6 2.8 2.6 2.3 2.2 1.2 1.9 1.1
.9 .3 –.7 –.6 –.1 –.1 1.1 .6 –1.1 –1.4 –.3 –.3 .6 –.3 –.4 –1.3 –1.8 –.2 –2.3 –.4 2.0 –1.7 –.6 1.5 1.5 .8 .2
–.1 .8 –.4 –1.1 –2.0 –.6 –1.0 –1.1 –.8 –.3 –.1 –.1 –1.4 –1.1 –1.2 –2.2 –3.6 –2.5 –1.3 –1.4 1.1 –.2 –1.8 –1.9 –.2 1.3 .3 –.1
–.7 –2.1

SATOBS : RMS O-B VECTOR DIFFERENCES (M/S) BETWEEN 101 AND 400 HPA FIGURE 24
JANUARY 1997
USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 10 OBS ARE PRESENT


7 7 7 7 6 7 7 6 6 5 6 6 8 6 7 9 8 8 8 7 9 8 11
9 5 6 7 6 7 6 7 6 6 7 8 8 8 7 10 8 6 5 6 6 10 8 9 8 8 10 12
11 8 8 7 7 6 7 6 5 6 6 6 5 7 7 6 6 9 10 8 7 7 9 15 12 12 7 6 7 13 12 16 13
8 7 6 7 6 5 6 6 6 6 5 5 5 7 6 6 8 8 9 7 8 13 8 11 10 11 11 9 10 9 10
6 6 6 6 5 6 7 6 6 6 6 6 6 6 7 6 7 9 7 9 7 6 8 8 8 7 6 6 6 6 6
6 6 6 7 6 6 6 8 8 7 7 7 6 6 6 6 6 7 6 8 8 7 9 7 9 8 7 8 8 7 7 7 6 6 7
7 5 5 5 5 7 7 6 7 7 7 7 7 7 6 7 9 6 6 6 7 5 7 7 8 9 8 8 7 7 7 9
7 6 5 5 5 5 5 5 6 5 5 6 5 6 6 7 4 4 5 6 6 6 6 7 8 7 7 7 7 6 7 6 7 6
7 6 5 5 5 5 6 5 6 6 5 6 5 5 5 5 5 5 6 5 7 5 8 9 9 8 7 6 7 8 8 7 7 8
9 8 7 6 5 6 6 6 6 6 6 7 8 5 5 6 6 6 8 6 6 9 6 6 7 8 7 8 8 7 7 7 8
6 5 6 8 7 7 6 7 7 7 6 7 6 7 7 8 7 8 10 9 7 9 9 7 9 8 7 8 7 6 9
7 9

MONITORING OF SATELLITE TEMPERATURES

MONITORING CENTRE: BRACKNELL

MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from NOAA-12, NOAA-14 500 km.

Standard of comparison :Background field from Bracknell global model.

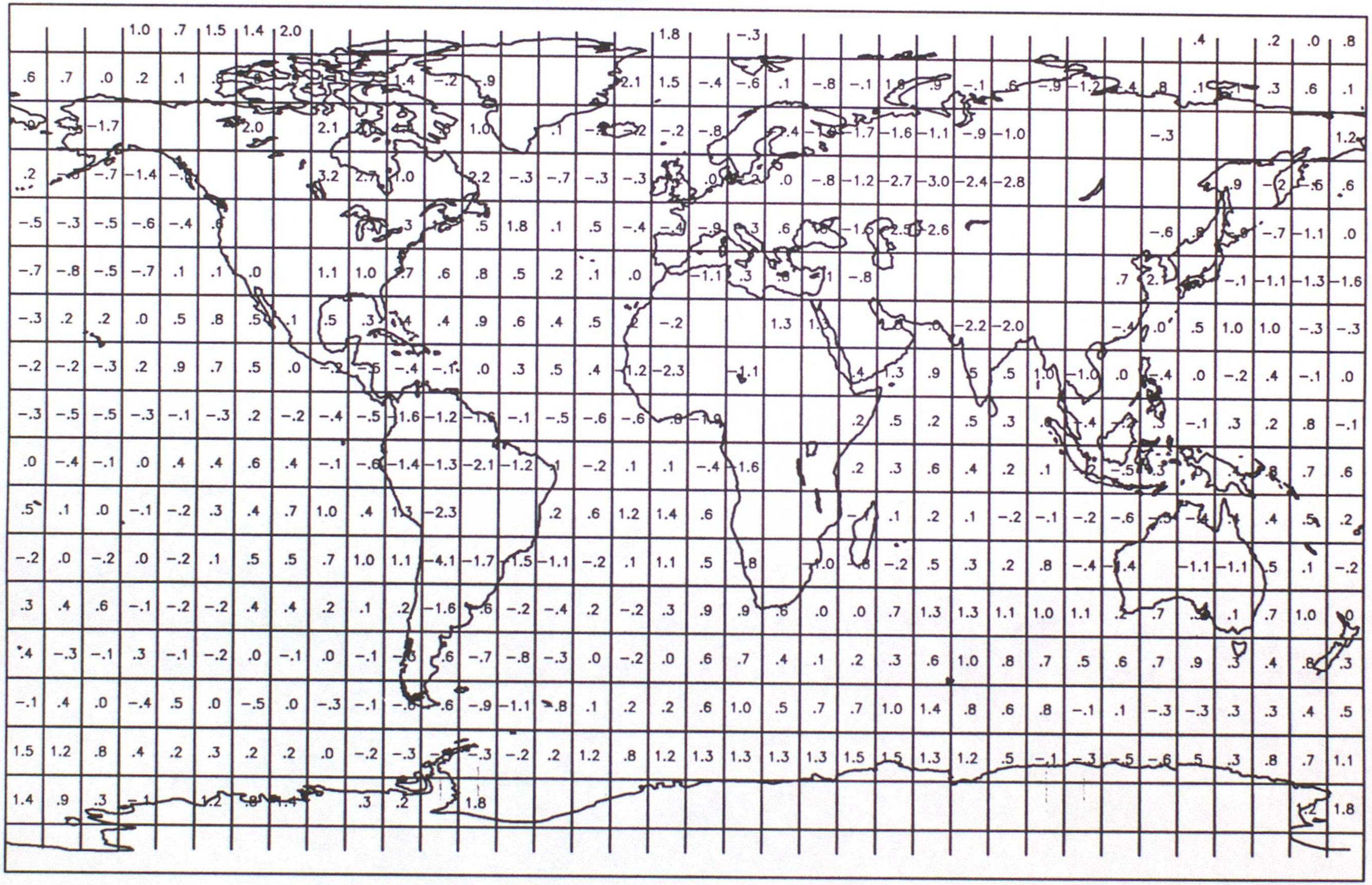
Selection Criteria :All SATEM soundings where number of observations > 30.

Data Extracted :Layer: 850 - 1000 hPa
100 - 300 hPa
30 - 50 hPa

:Mean observation minus background temperature differences

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
JANUARY 1997
NOAA-12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 25



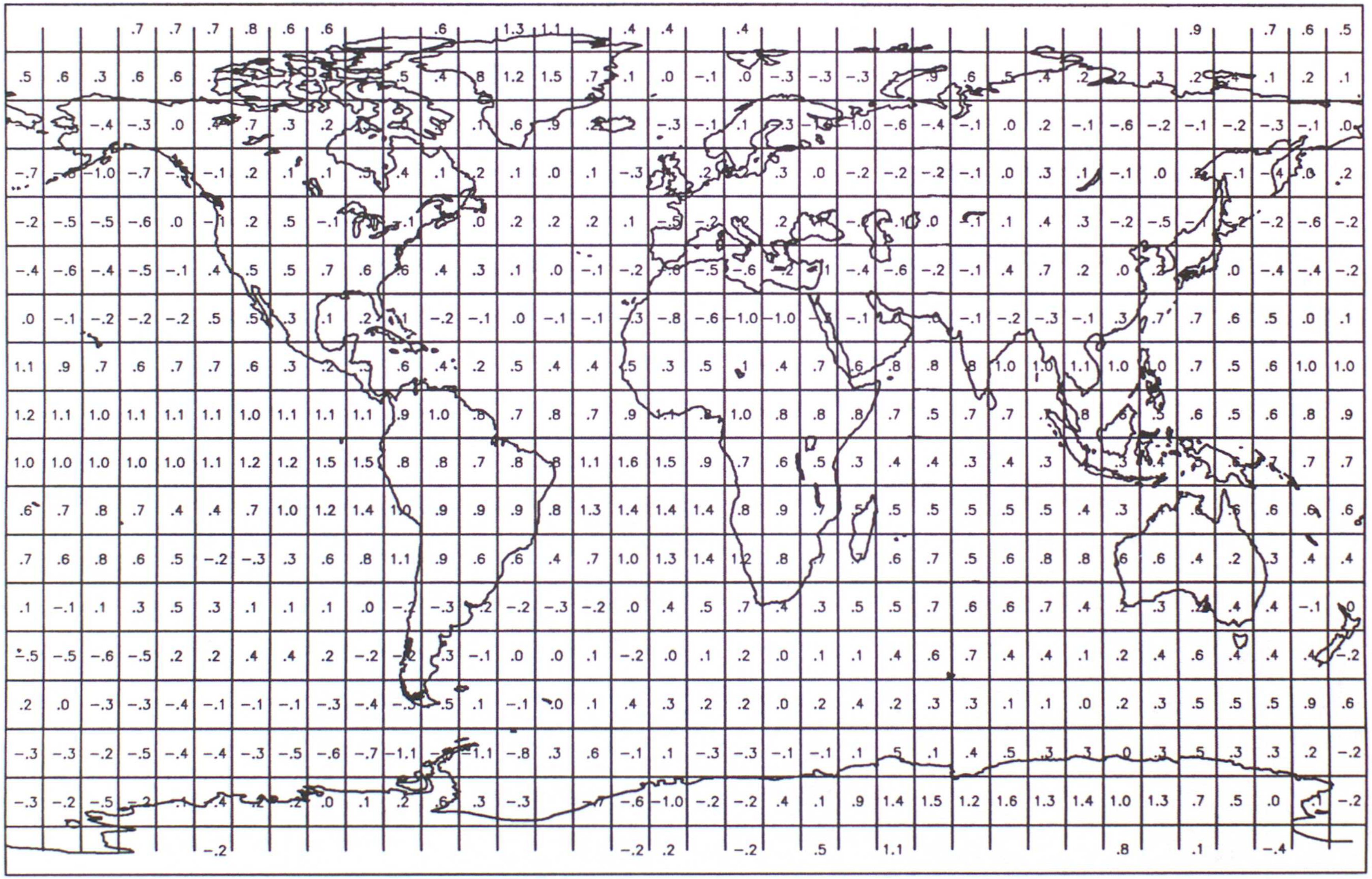
500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA

JANUARY 1997

FIGURE 26

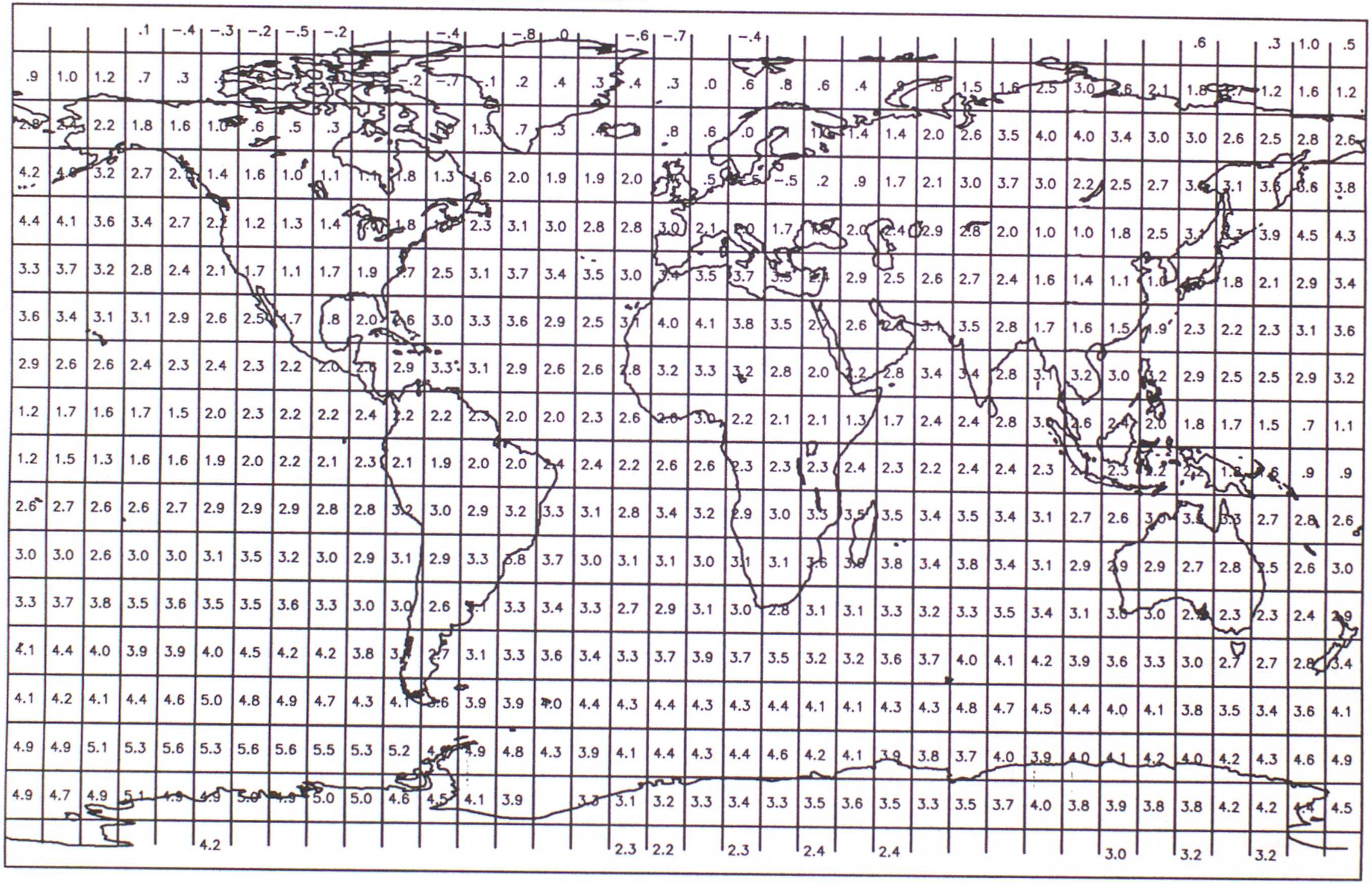
NOAA–12, USING ALL OBSERVATIONS

VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT


.7 .7 .7 .8 .6 .6 .6 1.3 1.1 .4 .4 .4 .9 .7 .6 .5
.5 .6 .3 .6 .6 .5 .4 .8 1.2 1.5 .7 .1 .0 –.1 .0 –.3 –.3 –.3 .2 .9 .6 .5 .4 .2 .2 .3 .2 .1 .2 .1
–.4 –.3 .0 .4 .7 .3 .2 .1 .6 .9 .2 –.3 –.1 .1 .3 –1.0 –.6 –.4 –.1 .0 .2 –.1 –.6 –.2 –.1 –.2 –.3 –.1 .0
–.7 –.8 –1.0 –.7 –.1 .2 .1 .1 .3 .4 .1 .2 .1 .0 .1 –.3 .2 .3 .0 –.2 –.2 –.2 –.1 .0 .3 .1 –.1 .0 .2 –.1 –.4 .6 .2
–.2 –.5 –.5 –.6 .0 –.1 .2 .5 –.1 .1 .0 .2 .2 .2 .1 –.5 –.2 .2 .2 –.2 .1 .0 –.1 .1 .4 .3 –.2 –.5 –.1 –.2 –.2 –.6 –.2
–.4 –.6 –.4 –.5 –.1 .4 .5 .5 .7 .6 .6 .4 .3 .1 .0 –.1 –.2 –.5 –.6 –.2 –.1 –.4 –.6 –.2 –.1 .4 .7 .2 .0 .2 .0 –.4 –.4 –.2
.0 –.1 –.2 –.2 –.2 .5 .5 .3 .1 .2 .1 –.2 –.1 .0 –.1 –.1 –.3 –.8 –.6 –1.0 –1.0 –.1 –.1 –.2 –.3 –.1 .3 .7 .7 .6 .5 .0 .1
1.1 .9 .7 .6 .7 .7 .6 .3 .2 .6 .4 .2 .5 .4 .4 .5 .3 .5 .1 .4 .7 .6 .8 .8 .8 1.0 1.0 1.1 1.0 .0 .7 .5 .6 1.0 1.0
1.2 1.1 1.0 1.1 1.1 1.1 1.0 1.1 1.1 1.1 .9 1.0 .8 .7 .8 .7 .9 1.0 .8 .8 .8 .7 .5 .7 .7 .8 .6 .6 .5 .6 .8 .9
1.0 1.0 1.0 1.0 1.0 1.1 1.2 1.2 1.5 1.5 .8 .8 .7 .8 .8 1.1 1.6 1.5 .9 .7 .6 .5 .3 .4 .4 .3 .4 .3 .3 .4 .7 .7 .7
.6 .7 .8 .7 .4 .4 .7 1.0 1.2 1.4 1.0 .9 .9 .9 .8 1.3 1.4 1.4 1.4 .8 .9 .7 .5 .5 .5 .5 .5 .5 .4 .3 .6 .6 .6 .6 .6
.7 .6 .8 .6 .5 –.2 –.3 .3 .6 .8 1.1 .9 .6 .6 .4 .7 1.0 1.3 1.4 1.2 .8 .7 .6 .7 .5 .6 .8 .8 .6 .6 .4 .2 .3 .4 .4
.1 –.1 .1 .3 .5 .3 .1 .1 .1 .0 –.2 –.3 .2 –.2 –.3 –.2 .0 .4 .5 .7 .4 .3 .5 .5 .7 .6 .6 .7 .4 .2 .3 .2 .4 .4 –.1 .0
–.5 –.5 –.6 –.5 .2 .2 .4 .4 .2 –.2 –.2 .3 –.1 .0 .0 .1 –.2 .0 .1 .2 .0 .1 .1 .4 .6 .7 .4 .4 .1 .2 .4 .6 .4 .4 .4 –.2
.2 .0 –.3 –.3 –.4 –.1 –.1 –.1 –.3 –.4 –.5 .5 .1 –.1 .0 .1 .4 .3 .2 .2 .0 .2 .4 .2 .3 .3 .1 .1 .0 .2 .3 .5 .5 .5 .9 .6
–.3 –.3 –.2 –.5 –.4 –.4 –.3 –.5 –.6 –.7 –1.1 –1.1 –.8 .3 .6 –.1 .1 –.3 –.3 –.1 –.1 .1 .5 .1 .4 .5 .3 .3 .0 .3 .5 .3 .3 .2 –.2
–.3 –.2 –.5 –.2 .1 .4 .2 .2 .0 .1 .2 .6 .3 –.3 –.7 –.6 –1.0 –.2 –.2 .4 .1 .9 1.4 1.5 1.2 1.6 1.3 1.4 1.0 1.3 .7 .5 .0 .1 –.2
–.2 –.2 .2 –.2 .5 1.1 .8 .1 –.4

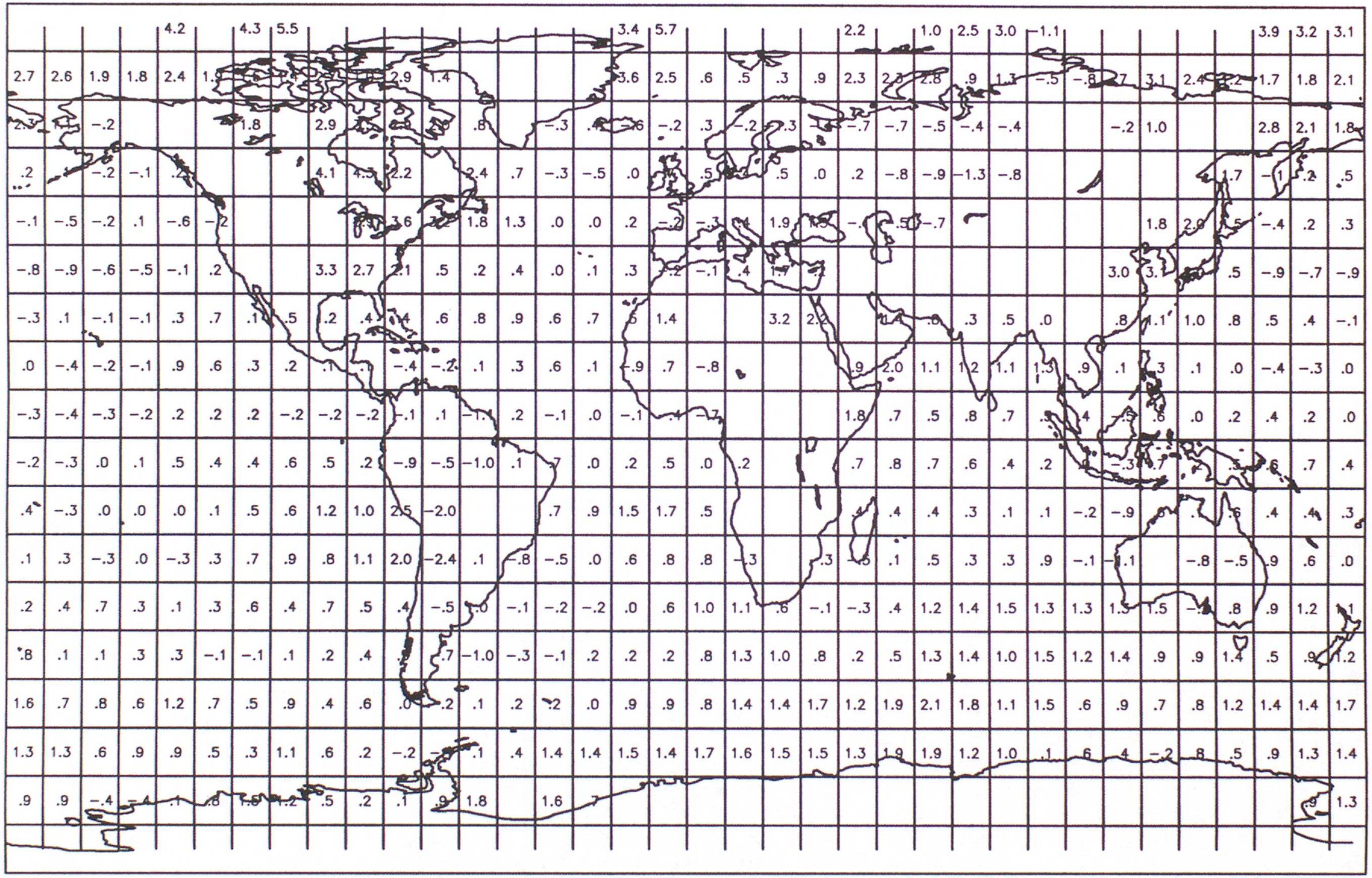
500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
JANUARY 1997
NOAA–12, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 27


.1 −.4 −.3 −.2 −.5 −.2 −.4 −.8 .0 −.6 −.7 −.4 .6 .3 1.0 .5
.9 1.0 1.2 .7 .3 −.2 −.7 −.1 .2 .4 .3 .4 .3 .0 .6 .8 .6 .4 .9 .8 1.5 1.6 2.5 3.0 2.6 2.1 1.8 2.7 1.2 1.6 1.2
2.8 2.4 2.2 1.8 1.6 1.0 .6 .5 .3 1.0 1.3 .7 .3 .4 .8 .6 .0 .1 1.0 1.4 1.4 2.0 2.6 3.5 4.0 4.0 3.4 3.0 3.0 2.6 2.5 2.8 2.6
4.2 4.0 3.2 2.7 2.1 1.4 1.6 1.0 1.1 1.1 1.8 1.3 1.6 2.0 1.9 1.9 2.0 .5 .5 −.5 .2 .9 1.7 2.1 3.0 3.7 3.0 2.2 2.5 2.7 3.6 3.1 3.6 3.6 3.8
4.4 4.1 3.6 3.4 2.7 2.2 1.2 1.3 1.4 1.6 1.8 1.8 2.3 3.1 3.0 2.8 2.8 3.0 2.1 2.0 1.7 1.5 2.0 2.4 2.9 2.8 2.0 1.0 1.0 1.8 2.5 3.1 3.3 3.9 4.5 4.3
3.3 3.7 3.2 2.8 2.4 2.1 1.7 1.1 1.7 1.9 2.7 2.5 3.1 3.7 3.4 3.5 3.0 3.4 3.5 3.7 3.5 2.4 2.9 2.5 2.6 2.7 2.4 1.6 1.4 1.1 1.0 1.6 1.8 2.1 2.9 3.4
3.6 3.4 3.1 3.1 2.9 2.6 2.5 1.7 .8 2.0 2.6 3.0 3.3 3.6 2.9 2.5 3.1 4.0 4.1 3.8 3.5 2.7 2.6 2.6 3.1 3.5 2.8 1.7 1.6 1.5 1.9 2.3 2.2 2.3 3.1 3.6
2.9 2.6 2.6 2.4 2.3 2.4 2.3 2.2 2.0 2.6 2.9 3.3 3.1 2.9 2.6 2.6 2.8 3.2 3.3 3.2 2.8 2.0 2.2 2.8 3.4 3.4 2.8 3.1 3.2 3.0 3.2 2.9 2.5 2.5 2.9 3.2
1.2 1.7 1.6 1.7 1.5 2.0 2.3 2.2 2.2 2.4 2.2 2.2 2.3 2.0 2.0 2.3 2.6 2.6 3.0 2.2 2.1 2.1 1.3 1.7 2.4 2.4 2.8 3.6 2.6 2.4 2.0 1.8 1.7 1.5 .7 1.1
1.2 1.5 1.3 1.6 1.6 1.9 2.0 2.2 2.1 2.3 2.1 1.9 2.0 2.0 2.4 2.4 2.2 2.6 2.6 2.3 2.3 2.3 2.4 2.3 2.2 2.4 2.4 2.3 2.1 2.3 2.2 2.2 1.3 1.6 .9 .9
2.6 2.7 2.6 2.6 2.7 2.9 2.9 2.9 2.8 2.8 3.2 3.0 2.9 3.2 3.3 3.1 2.8 3.4 3.2 2.9 3.0 3.3 3.5 3.5 3.4 3.5 3.4 3.1 2.7 2.6 3.0 3.5 3.3 2.7 2.8 2.6
3.0 3.0 2.6 3.0 3.0 3.1 3.5 3.2 3.0 2.9 3.1 2.9 3.3 3.8 3.7 3.0 3.1 3.1 3.0 3.1 3.1 3.6 3.8 3.8 3.4 3.8 3.4 3.1 2.9 2.9 2.9 2.7 2.8 2.5 2.6 3.0
3.3 3.7 3.8 3.5 3.6 3.5 3.5 3.6 3.3 3.0 3.0 2.6 3.1 3.3 3.4 3.3 2.7 2.9 3.1 3.0 2.8 3.1 3.1 3.3 3.2 3.3 3.5 3.4 3.1 3.0 3.0 2.9 2.3 2.3 2.4 2.9
4.1 4.4 4.0 3.9 3.9 4.0 4.5 4.2 4.2 3.8 3.7 2.7 3.1 3.3 3.6 3.4 3.3 3.7 3.9 3.7 3.5 3.2 3.2 3.6 3.7 4.0 4.1 4.2 3.9 3.6 3.3 3.0 2.7 2.7 2.8 3.4
4.1 4.2 4.1 4.4 4.6 5.0 4.8 4.9 4.7 4.3 4.1 3.6 3.9 3.9 4.0 4.4 4.3 4.4 4.3 4.3 4.4 4.1 4.1 4.3 4.3 4.8 4.7 4.5 4.4 4.0 4.1 3.8 3.5 3.4 3.6 4.1
4.9 4.9 5.1 5.3 5.6 5.3 5.6 5.6 5.5 5.3 5.2 4.9 4.9 4.8 4.3 3.9 4.1 4.4 4.3 4.4 4.6 4.2 4.1 3.9 3.8 3.7 4.0 3.9 4.0 4.1 4.2 4.0 4.2 4.3 4.6 4.9
4.9 4.7 4.9 5.1 4.9 4.9 5.0 4.9 5.0 5.0 4.6 4.5 4.1 3.9 3.3 3.1 3.2 3.3 3.4 3.3 3.5 3.6 3.5 3.3 3.5 3.7 4.0 3.8 3.9 3.8 3.8 4.2 4.2 4.4 4.5
4.2 2.3 2.2 2.3 2.4 2.4 3.0 3.2 3.2

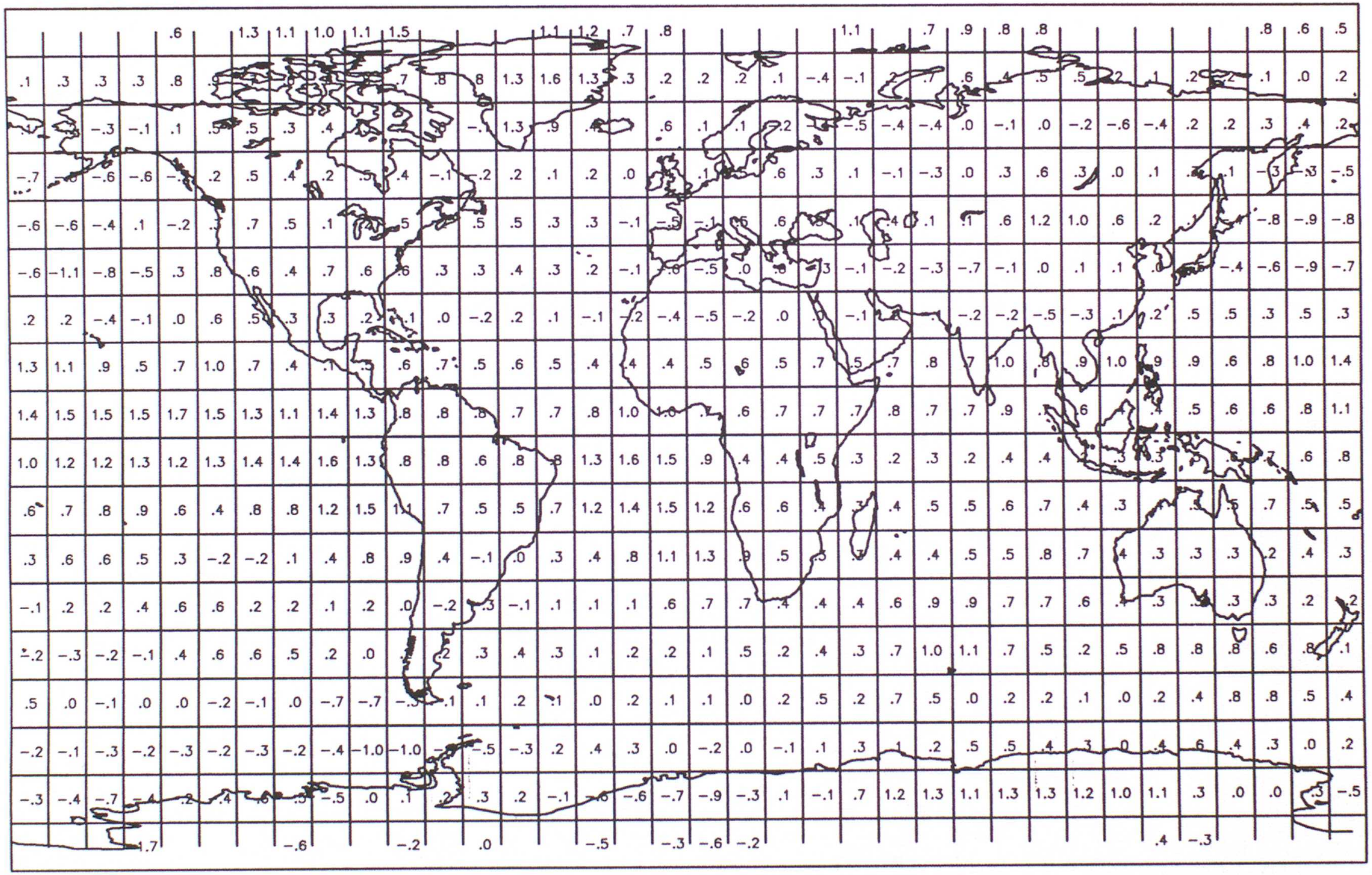
500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 850 TO 1000 HPA
JANUARY 1997
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 28


4.2 4.3 5.5 3.4 5.7 2.2 1.0 2.5 3.0 −1.1 3.9 3.2 3.1
2.7 2.6 1.9 1.8 2.4 2.9 1.4 3.6 2.5 .6 .5 .3 .9 2.3 2.3 2.8 .9 1.3 −.5 −.8 .7 3.1 2.4 2.2 1.7 1.8 2.1
−.2 1.8 2.9 .8 −.3 .4 .6 −.2 .3 −.2 .3 −.7 −.7 −.5 −.4 −.4 −.2 1.0 2.8 2.1 1.8
.2 −.2 −.1 .2 4.1 4.3 2.2 2.4 .7 −.3 −.5 .0 .5 .5 .0 .2 −.8 −.9 −1.3 −.8 .7 −.1 .2 .5
−.1 −.5 −.2 .1 −.6 −.2 3.6 1.8 1.3 .0 .0 .2 −.2 −.3 .4 1.9 1.5 −.5 −.7 1.8 2.9 .5 −.4 .2 .3
−.8 −.9 −.6 −.5 −.1 .2 3.3 2.7 2.1 .5 .2 .4 .0 .1 .3 .2 −.1 .4 1.7 .2 3.0 3.1 .5 −.9 −.7 −.9
−.3 .1 −.1 −.1 .3 .7 .1 .5 .2 .4 .4 .6 .8 .9 .6 .7 .5 1.4 3.2 2.2 1.4 .8 .3 .5 .0 .8 1.1 1.0 .8 .5 .4 −.1
.0 −.4 −.2 −.1 .9 .6 .3 .2 .1 .1 −.4 −.2 .1 .3 .6 .1 −.9 .7 −.8 .9 2.0 1.1 1.2 1.1 1.3 .9 .1 .3 .1 .0 −.4 −.3 .0
−.3 −.4 −.3 −.2 .2 .2 .2 −.2 −.2 −.2 −.1 .1 −1.1 .2 −.1 .0 −.1 .4 −.7 1.8 .7 .5 .8 .7 .4 .5 .6 .0 .2 .4 .2 .0
−.2 −.3 .0 .1 .5 .4 .4 .6 .5 .2 −.9 −.5 −1.0 .1 .7 .0 .2 .5 .0 .2 .7 .8 .7 .6 .4 .2 .4 .3 .7 .5 .6 .7 .4
.4 −.3 .0 .0 .0 .1 .5 .6 1.2 1.0 2.5 −2.0 .7 .9 1.5 1.7 .5 .4 .4 .4 .3 .1 .1 −.2 −.9 .6 .6 .6 .4 .4 .3
.1 .3 −.3 .0 −.3 .3 .7 .9 .8 1.1 2.0 −2.4 .1 −.8 −.5 .0 .6 .8 .8 −.3 .3 −.5 .1 .5 .3 .3 .9 −.1 −1.1 −.8 −.5 .9 .6 .0
.2 .4 .7 .3 .1 .3 .6 .4 .7 .5 .4 −.5 .0 −.1 −.2 −.2 .0 .6 1.0 1.1 .6 −.1 −.3 .4 1.2 1.4 1.5 1.3 1.3 1.3 1.5 −.4 .8 .9 1.2 .1
.8 .1 .1 .3 .3 −.1 −.1 .1 .2 .4 .5 .7 −1.0 −.3 −.1 .2 .2 .2 .8 1.3 1.0 .8 .2 .5 1.3 1.4 1.0 1.5 1.2 1.4 .9 .9 1.4 .5 .9 1.2
1.6 .7 .8 .6 1.2 .7 .5 .9 .4 .6 .0 .2 .1 .2 .2 .0 .9 .9 .8 1.4 1.4 1.7 1.2 1.9 2.1 1.8 1.1 1.5 .6 .9 .7 .8 1.2 1.4 1.4 1.7
1.3 1.3 .6 .9 .9 .5 .3 1.1 .6 .2 −.2 .1 .1 .4 1.4 1.4 1.5 1.4 1.7 1.6 1.5 1.5 1.3 1.9 1.9 1.2 1.0 .1 .6 .4 −.2 .8 .5 .9 1.3 1.4
.9 .9 −.4 −.4 .1 .8 1.8 1.2 .5 .2 .1 .9 1.8 1.6 .7 .9 1.3

500 KM SATEMS : MEAN O-B TEMPERATURE DIFFERENCES (DEG C) : 100 TO 300 HPA
JANUARY 1997
NOAA-14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

FIGURE 29


.6 1.3 1.1 1.0 1.1 1.5 1.1 1.2 .7 .8 1.1 .7 .9 .8 .8 .8 .6 .5
.1 .3 .3 .3 .8 .9 .7 .8 .8 1.3 1.6 1.3 .3 .2 .2 .2 .1 -.4 -.1 .2 .7 .6 .4 .5 .5 .2 .1 .2 .2 .1 .0 .2
.1 -.3 -.1 .1 .5 .5 .3 .4 -.1 1.3 .9 .4 .6 .1 .1 .2 -.5 -.4 -.4 .0 -.1 .0 -.2 -.6 -.4 .2 .2 .3 .4 .2
-.7 -.6 -.6 -.6 .2 .5 .4 .2 .5 .4 -.1 -.2 .2 .1 .2 .0 .1 .5 .6 .3 .1 -.1 -.3 .0 .3 .6 .3 .0 .1 .1 -.3 -.3 -.5
-.6 -.6 -.4 .1 -.2 .3 .7 .5 .1 .4 .5 .5 .5 .3 .3 -.1 -.5 -.1 .5 .6 .3 .1 .4 .1 .1 .6 1.2 1.0 .6 .2 .1 -.4 -.8 -.9 -.8
-.6 -1.1 -.8 -.5 .3 .8 .6 .4 .7 .6 .6 .3 .3 .4 .3 .2 -.1 -.6 -.5 .0 .8 .3 -.1 -.2 -.3 -.7 -.1 .0 .1 .1 .0 .5 -.4 -.6 -.9 -.7
.2 .2 -.4 -.1 .0 .6 .5 .3 .3 .2 .1 .0 -.2 .2 .1 -.1 -.2 -.4 -.5 -.2 .0 .0 -.1 .2 .1 -.2 -.2 -.5 -.3 .1 .2 .5 .5 .3 .5 .3
1.3 1.1 .9 .5 .7 1.0 .7 .4 .1 .5 .6 .7 .5 .6 .5 .4 .4 .4 .5 .6 .5 .7 .5 .7 .8 .7 1.0 .8 .9 1.0 .9 .9 .6 .8 1.0 1.4
1.4 1.5 1.5 1.5 1.7 1.5 1.3 1.1 1.4 1.3 .8 .8 .8 .7 .7 .8 1.0 1.0 .7 .6 .7 .7 .7 .8 .7 .7 .9 .7 .6 .4 .5 .6 .6 .8 1.1
1.0 1.2 1.2 1.3 1.2 1.3 1.4 1.4 1.6 1.3 .8 .8 .6 .8 .8 1.3 1.6 1.5 .9 .4 .4 .5 .3 .2 .3 .2 .4 .4 .3 .3 .6 .7 .6 .8
.6 .7 .8 .9 .6 .4 .8 .8 1.2 1.5 1.1 .7 .5 .5 .7 1.2 1.4 1.5 1.2 .6 .6 .4 .3 .4 .5 .5 .6 .7 .4 .3 .5 .5 .7 .5 .5
.3 .6 .6 .5 .3 -.2 -.2 .1 .4 .8 .9 .4 -.1 .0 .3 .4 .8 1.1 1.3 .9 .5 .5 .3 .4 .4 .5 .5 .8 .7 .4 .3 .3 .3 .2 .4 .3
-.1 .2 .2 .4 .6 .6 .2 .2 .1 .2 .0 -.2 .3 -.1 .1 .1 .1 .6 .7 .7 .4 .4 .4 .6 .9 .9 .7 .7 .6 .4 .3 .3 .3 .3 .2 .2
-.2 -.3 -.2 -.1 .4 .6 .6 .5 .2 .0 .2 .3 .4 .3 .1 .2 .2 .1 .5 .2 .4 .3 .7 1.0 1.1 .7 .5 .2 .5 .8 .8 .8 .6 .8 .1
.5 .0 -.1 .0 .0 -.2 -.1 .0 -.7 -.7 -.3 .1 .1 .2 .1 .0 .2 .1 .1 .0 .2 .5 .2 .7 .5 .0 .2 .2 .1 .0 .2 .4 .8 .8 .5 .4
-.2 -.1 -.3 -.2 -.3 -.2 -.3 -.2 -.4 -1.0 -1.0 -.5 -.3 .2 .4 .3 .0 -.2 .0 -.1 .1 .3 .1 .2 .5 .5 .4 .3 .0 .4 .6 .4 .3 .0 .2
-.3 -.4 -.7 -.4 .2 .4 .6 .5 -.5 .0 .1 .2 .3 .2 -.1 -.6 -.6 -.7 -.9 -.3 .1 -.1 .7 1.2 1.3 1.1 1.3 1.3 1.2 1.0 1.1 .3 .0 .0 .3 -.5
.7 -.6 -.2 .0 -.5 -.3 -.6 -.2 .4 -.3

500 KM SATEMS : MEAN O–B TEMPERATURE DIFFERENCES (DEG C) : 30 TO 50 HPA
JANUARY 1997
FIGURE 30
NOAA–14, USING ALL OBSERVATIONS
VALUES ARE PRINTED WHERE MORE THAN 30 OBS ARE PRESENT

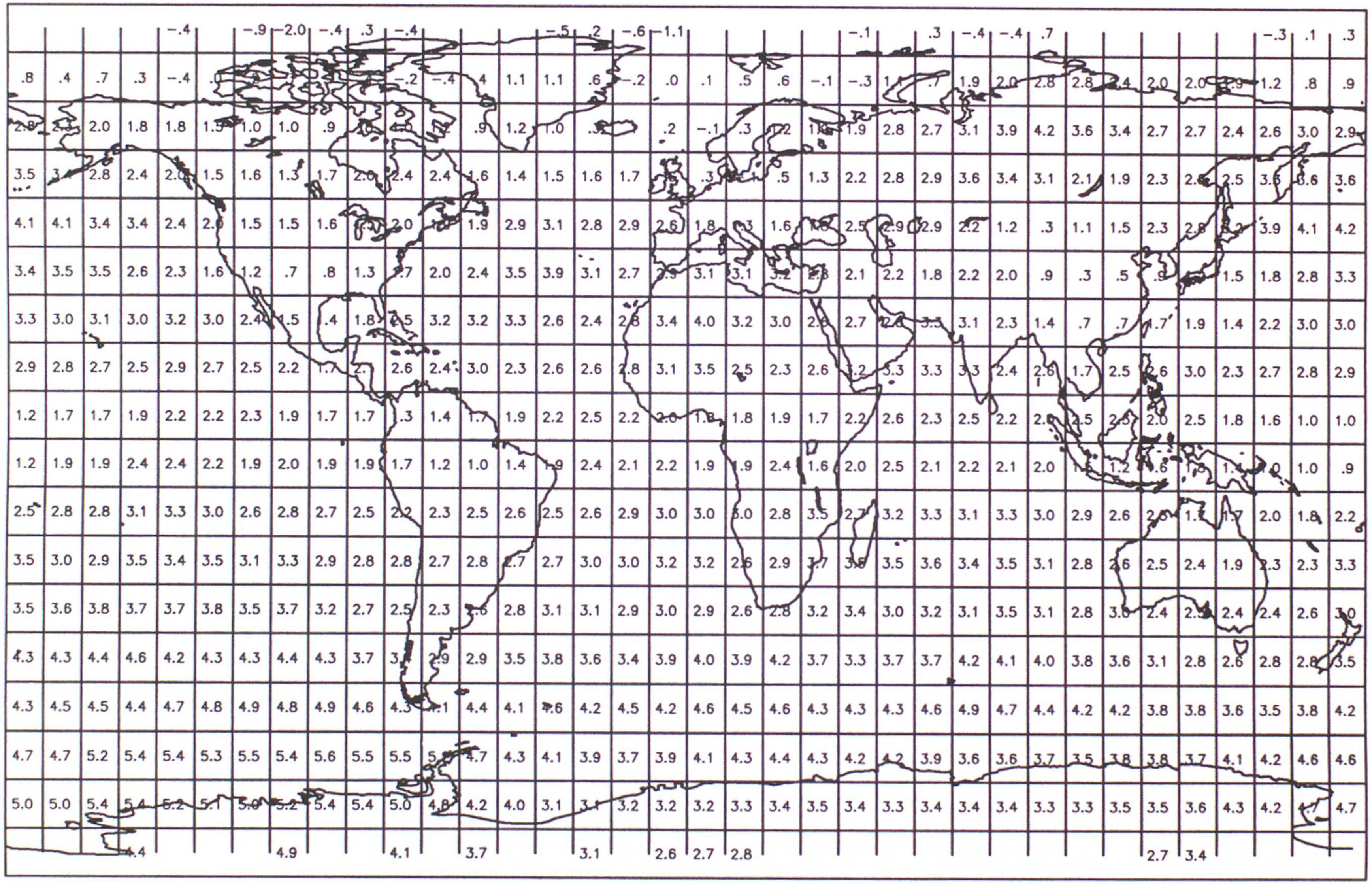

-.4 -.9 -2.0 -.4 .3 -.4 -.5 .2 -.6 -1.1 -.1 .3 -.4 -.4 .7 -.3 .1 .3
.8 .4 .7 .3 -.4 -.2 -.4 .4 1.1 1.1 .6 -.2 .0 .1 .5 .6 -.1 -.3 1.1 .7 1.9 2.0 2.8 2.8 2.4 2.0 2.0 2.9 1.2 .8 .9
2.8 2.3 2.0 1.8 1.8 1.5 1.0 1.0 .9 .9 1.2 1.0 .3 .2 -.1 .3 1.2 1.9 1.9 2.8 2.7 3.1 3.9 4.2 3.6 3.4 2.7 2.7 2.4 2.6 3.0 2.9
3.5 3.4 2.8 2.4 2.0 1.5 1.6 1.3 1.7 2.0 2.4 2.4 1.6 1.4 1.5 1.6 1.7 .3 .5 1.3 2.2 2.8 2.9 3.6 3.4 3.1 2.1 1.9 2.3 2.6 2.5 3.6 3.6 3.6
4.1 4.1 3.4 3.4 2.4 2.6 1.5 1.5 1.6 2.0 1.9 2.9 3.1 2.8 2.9 2.6 1.8 1.3 1.6 1.6 2.5 2.9 2.9 2.2 1.2 .3 1.1 1.5 2.3 2.8 3.2 3.9 4.1 4.2
3.4 3.5 3.5 2.6 2.3 1.6 1.2 .7 .8 1.3 .7 2.0 2.4 3.5 3.9 3.1 2.7 2.9 3.1 3.1 3.2 2.3 2.1 2.2 1.8 2.2 2.0 .9 .3 .5 .9 1.5 1.8 2.8 3.3
3.3 3.0 3.1 3.0 3.2 3.0 2.4 1.5 .4 1.8 2.5 3.2 3.2 3.3 2.6 2.4 2.8 3.4 4.0 3.2 3.0 2.6 2.7 2.6 3.3 3.1 2.3 1.4 .7 .7 1.7 1.9 1.4 2.2 3.0 3.0
2.9 2.8 2.7 2.5 2.9 2.7 2.5 2.2 1.7 2.6 2.4 3.0 2.3 2.6 2.6 2.8 3.1 3.5 2.5 2.3 2.6 3.2 3.3 3.3 3.3 2.4 2.6 1.7 2.5 2.6 3.0 2.3 2.7 2.8 2.9
1.2 1.7 1.7 1.9 2.2 2.2 2.3 1.9 1.7 1.7 .3 1.4 1.7 1.9 2.2 2.5 2.2 2.0 1.8 1.8 1.9 1.7 2.2 2.6 2.3 2.5 2.2 2.6 2.5 2.5 2.0 2.5 1.8 1.6 1.0 1.0
1.2 1.9 1.9 2.4 2.4 2.2 1.9 2.0 1.9 1.9 1.7 1.2 1.0 1.4 1.9 2.4 2.1 2.2 1.9 1.9 2.4 1.6 2.0 2.5 2.1 2.2 2.1 2.0 1.5 1.2 1.6 1.3 1.4 1.0 1.0 .9
2.5 2.8 2.8 3.1 3.3 3.0 2.6 2.8 2.7 2.5 2.2 2.3 2.5 2.6 2.5 2.6 2.9 3.0 3.0 3.0 2.8 3.5 2.7 3.2 3.3 3.1 3.3 3.0 2.9 2.6 2.6 1.7 1.7 2.0 1.8 2.2
3.5 3.0 2.9 3.5 3.4 3.5 3.1 3.3 2.9 2.8 2.8 2.7 2.8 2.7 2.7 3.0 3.0 3.2 3.2 2.6 2.9 3.7 3.6 3.5 3.6 3.4 3.5 3.1 2.8 2.6 2.5 2.4 1.9 2.3 2.3 3.3
3.5 3.6 3.8 3.7 3.7 3.8 3.5 3.7 3.2 2.7 2.5 2.3 2.6 2.8 3.1 3.1 2.9 3.0 2.9 2.6 2.8 3.2 3.4 3.0 3.2 3.1 3.5 3.1 2.8 3.0 2.4 2.5 2.4 2.4 2.6 3.0
4.3 4.3 4.4 4.6 4.2 4.3 4.3 4.4 4.3 3.7 2.9 2.9 3.5 3.8 3.6 3.4 3.9 4.0 3.9 4.2 3.7 3.3 3.7 3.7 4.2 4.1 4.0 3.8 3.6 3.1 2.8 2.6 2.8 2.8 3.5
4.3 4.5 4.5 4.4 4.7 4.8 4.9 4.8 4.9 4.6 4.3 4.1 4.4 4.1 4.6 4.2 4.5 4.2 4.6 4.5 4.6 4.3 4.3 4.3 4.6 4.9 4.7 4.4 4.2 4.2 3.8 3.8 3.6 3.5 3.8 4.2
4.7 4.7 5.2 5.4 5.4 5.3 5.5 5.4 5.6 5.5 5.5 4.7 4.3 4.1 3.9 3.7 3.9 4.1 4.3 4.4 4.3 4.2 4.2 3.9 3.6 3.6 3.7 3.5 3.8 3.8 3.7 4.1 4.2 4.6 4.6
5.0 5.0 5.4 5.4 5.2 5.1 5.0 5.2 5.4 5.4 5.0 4.8 4.2 4.0 3.1 3.1 3.2 3.2 3.2 3.3 3.4 3.5 3.4 3.3 3.4 3.4 3.4 3.3 3.3 3.5 3.5 3.6 4.3 4.2 4.7 4.7
4.4 4.9 4.1 3.7 3.1 2.6 2.7 2.8 2.7 3.4

TABLE 8

MONTHLY MONITORING OF MARINE SURFACE OBSERVATIONS (COSNA)
DATA TYPE:- DRIFTER
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures		
Period		:One calendar month.
Data monitored		:Reports from each unique identifier for drifting buoy.
Area monitored		:10°N - 80°N, 85°W - 0°W
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:All hours combined.
Elements monitored		:Mean sea-level pressure (hPa) :Wind speed ($m\ s^{-1}$) :Wind direction (degrees)
Parameters monitored		
	:NOBS	:Number of observations received excluding duplicates.
	:NGE	:Number of observations with gross errors.
	:PGE	:Percentage of observations with gross errors.
	:SD	:SD of difference of observations from background values excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors. **N.B. A positive bias indicates the observation is veered to the background**
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors
GROSS ERROR LIMITS	:15 hPa (pressure) :25 $m\ s^{-1}$ (Vector Wind)	

N.B. Observations of wind direction are only included in the wind direction statistics if the observed OR background wind speed > 5 $m\ s^{-1}$

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
12521	44.7	-63.6	ALL	MSLP	SUR	5	0	0	0.6	-4.2	4.2
13903	24.4	-34.5	ALL	MSLP	SUR	280	0	0	0.9	0.0	0.9
13905	24.5	-42.4	ALL	MSLP	SUR	260	0	0	0.9	-0.2	0.9
13906	14.1	-42.4	ALL	MSLP	SUR	265	0	0	1.0	-0.2	1.0
13910	22.5	-41.5	ALL	MSLP	SUR	279	0	0	0.8	-0.2	0.8
13911	20.4	-53.7	ALL	MSLP	SUR	270	0	0	1.1	0.3	1.1
13912	22.5	-56.4	ALL	MSLP	SUR	281	0	0	1.2	0.5	1.3
13913	16.3	-41.3	ALL	MSLP	SUR	264	0	0	0.9	0.1	0.9
13915	16.4	-38.4	ALL	MSLP	SUR	256	0	0	0.9	-0.5	1.0
41529	41.1	-44.9	ALL	MSLP	SUR	274	0	0	1.7	0.0	1.7
41530	37.3	-46.3	ALL	MSLP	SUR	259	0	0	1.3	0.1	1.3
41611	13.2	-48.0	ALL	MSLP	SUR	206	0	0	0.9	-0.7	1.1
41612	16.9	-54.3	ALL	MSLP	SUR	222	0	0	0.9	-0.3	1.0
41613	16.2	-53.0	ALL	MSLP	SUR	208	0	0	0.9	-0.3	1.0
41614	14.8	-59.5	ALL	MSLP	SUR	211	0	0	0.9	0.0	0.9
41922	24.2	-43.3	ALL	MSLP	SUR	261	0	0	0.9	0.5	1.1
41924	15.3	-52.7	ALL	MSLP	SUR	238	0	0	1.1	-0.4	1.2
42624	53.6	-42.4	ALL	MSLP	SUR	113	0	0	2.1	-0.3	2.2
44513	43.6	-40.6	ALL	MSLP	SUR	287	0	0	1.8	-0.5	1.9
44601	45.2	-42.5	ALL	MSLP	SUR	275	0	0	1.8	0.1	1.8
44602	48.6	-41.3	ALL	MSLP	SUR	122	0	0	2.5	0.3	2.5
44603	46.3	-42.4	ALL	MSLP	SUR	248	0	0	1.7	0.3	1.8
44604	47.7	-38.6	ALL	MSLP	SUR	46	0	0	1.0	0.5	1.2
44606	46.0	-35.1	ALL	MSLP	SUR	219	0	0	1.7	0.1	1.7
44607	48.6	-34.7	ALL	MSLP	SUR	50	0	0	1.1	0.4	1.2
44614	62.8	-26.8	ALL	MSLP	SUR	1071	2	0	1.6	0.3	1.6
44617	44.5	-23.6	ALL	MSLP	SUR	3	3	100	0.0	0.0	0.0
44624	53.3	-41.1	ALL	MSLP	SUR	614	3	0	2.1	0.0	2.1
44726	52.6	-31.6	ALL	MSLP	SUR	709	1	0	1.8	0.2	1.8
44728	59.0	-39.6	ALL	MSLP	SUR	872	3	0	1.9	0.0	1.9
44742	45.3	-36.0	ALL	MSLP	SUR	254	0	0	1.6	-0.5	1.7
44743	47.5	-28.1	ALL	MSLP	SUR	439	6	1	1.6	0.2	1.6
44760	29.5	-64.4	ALL	MSLP	SUR	352	3	1	1.1	-0.1	1.1
44762	40.2	-35.6	ALL	MSLP	SUR	234	0	0	1.3	-0.2	1.3
44763	62.8	-19.1	ALL	MSLP	SUR	1778	5	0	1.7	0.2	1.7
44764	56.7	-41.1	ALL	MSLP	SUR	823	3	0	2.1	-0.1	2.1
44765	64.2	-26.5	ALL	MSLP	SUR	1268	1	0	1.8	-0.3	1.8
44766	54.0	-16.8	ALL	MSLP	SUR	1235	5	0	1.3	-0.3	1.4
44767	62.2	-20.3	ALL	MSLP	SUR	1676	8	0	1.7	0.1	1.7
44770	24.0	-63.8	ALL	MSLP	SUR	590	4	1	1.1	0.0	1.1
44772	59.8	-14.9	ALL	MSLP	SUR	1629	0	0	1.5	-0.2	1.6
44776	52.3	-32.0	ALL	MSLP	SUR	723	2	0	1.8	0.2	1.8
44777	56.5	-27.3	ALL	MSLP	SUR	906	10	1	1.9	0.1	1.9
44778	58.8	-23.2	ALL	MSLP	SUR	854	3	0	1.9	0.1	1.9
44779	45.1	-37.7	ALL	MSLP	SUR	443	2	0	1.7	-0.1	1.7
44780	52.3	-27.5	ALL	MSLP	SUR	441	0	0	1.7	-0.1	1.7
44849	57.3	-55.8	ALL	MSLP	SUR	289	67	23	6.0	3.1	6.8
44850	55.4	-47.0	ALL	MSLP	SUR	251	56	22	7.7	-1.2	7.7
44910	57.3	-51.4	ALL	MSLP	SUR	270	0	0	1.8	0.3	1.8
44911	52.6	-37.4	ALL	MSLP	SUR	100	0	0	2.0	0.5	2.1
44918	58.1	-52.5	ALL	MSLP	SUR	300	0	0	2.0	-0.4	2.0
44919	57.1	-50.9	ALL	MSLP	SUR	234	0	0	1.7	0.6	1.8
44923	59.7	-53.9	ALL	MSLP	SUR	157	12	8	2.8	0.3	2.9
44924	58.1	-49.9	ALL	MSLP	SUR	229	0	0	2.1	0.4	2.1
46764	56.1	-47.3	ALL	MSLP	SUR	229	48	21	6.2	-2.6	6.7
47541	64.7	-63.3	ALL	MSLP	SUR	348	0	0	1.3	-0.5	1.4
62503	36.9	-13.0	ALL	MSLP	SUR	547	0	0	1.1	-0.6	1.3
62504	35.3	-6.6	ALL	MSLP	SUR	181	0	0	1.4	-0.6	1.5
62507	34.1	-18.5	ALL	MSLP	SUR	594	0	0	1.1	-0.2	1.1
62508	51.3	-18.0	ALL	MSLP	SUR	684	0	0	1.1	0.4	1.2

IDENTIFIER	LAT.	LONG.	HOUR	ELEM	LEVEL	NOBS	NGE	PGE	SD	BIAS	RMS
MEAN SEA LEVEL PRESSURE											
62510	38.8	-15.4	ALL	MSLP	SUR	573	1	0	1.1	-0.3	1.1
62513	44.1	-18.2	ALL	MSLP	SUR	550	0	0	1.0	0.5	1.1
62515	45.9	-15.2	ALL	MSLP	SUR	617	1	0	1.1	-0.1	1.1
62517	49.3	-16.4	ALL	MSLP	SUR	590	0	0	1.1	0.0	1.1
62518	42.8	-19.3	ALL	MSLP	SUR	158	0	0	2.0	-0.6	2.1
62551	46.9	-9.1	ALL	MSLP	SUR	539	0	0	1.0	0.0	1.0
62697	57.5	-33.9	ALL	MSLP	SUR	759	3	0	1.8	0.4	1.8
62712	49.1	-34.6	ALL	MSLP	SUR	50	0	0	1.0	0.1	1.0
62713	44.2	-33.2	ALL	MSLP	SUR	285	0	0	1.5	0.1	1.5
62714	39.9	-29.1	ALL	MSLP	SUR	172	0	0	1.0	0.0	1.0
62803	55.1	-37.0	ALL	MSLP	SUR	1123	3	0	1.9	-0.1	1.9
62804	48.7	-28.7	ALL	MSLP	SUR	249	1	0	1.7	-0.2	1.7
64561	63.6	-31.6	ALL	MSLP	SUR	822	4	0	1.7	0.2	1.7
64562	60.0	-39.7	ALL	MSLP	SUR	998	78	8	2.9	-0.6	3.0
65562	53.2	-17.8	ALL	MSLP	SUR	104	0	0	1.3	-0.8	1.6
65593	58.6	-41.4	ALL	MSLP	SUR	253	15	6	2.3	-0.2	2.3
65594	60.2	-28.6	ALL	MSLP	SUR	1707	98	6	2.2	0.0	2.2
65595	60.6	-23.7	ALL	MSLP	SUR	1588	4	0	1.8	-0.1	1.9
65596	59.6	-46.1	ALL	MSLP	SUR	401	0	0	2.2	-1.1	2.5
65598	63.0	-31.5	ALL	MSLP	SUR	1543	69	4	2.6	-0.6	2.7
65599	51.2	-40.7	ALL	MSLP	SUR	1167	1	0	2.5	-0.5	2.5
WIND SPEED											
41529	41.1	-44.9	ALL	SPEED	SUR	264	0	0	2.9	-3.1	4.3
41530	37.3	-46.3	ALL	SPEED	SUR	251	0	0	2.5	-3.2	4.1
41611	13.2	-48.0	ALL	SPEED	SUR	205	0	0	1.1	0.6	1.3
41612	16.9	-54.3	ALL	SPEED	SUR	221	0	0	1.3	-0.8	1.5
41613	16.2	-53.0	ALL	SPEED	SUR	209	0	0	1.7	-1.3	2.1
41614	14.8	-59.5	ALL	SPEED	SUR	155	0	0	2.3	-1.6	2.8
42624	53.6	-42.4	ALL	SPEED	SUR	111	1	1	2.8	-1.9	3.4
44513	43.6	-40.6	ALL	SPEED	SUR	270	0	0	4.4	-6.1	7.5
44624	53.3	-41.1	ALL	SPEED	SUR	404	4	1	3.1	-1.5	3.4
44726	52.6	-31.6	ALL	SPEED	SUR	649	5	1	3.3	-1.3	3.5
44742	45.3	-36.0	ALL	SPEED	SUR	249	0	0	3.0	-0.7	3.1
44762	40.2	-35.6	ALL	SPEED	SUR	227	0	0	2.0	-0.9	2.2
44776	52.3	-32.0	ALL	SPEED	SUR	25	0	0	6.2	-10.4	12.1
62518	42.8	-19.3	ALL	SPEED	SUR	144	0	0	1.9	-0.1	1.9
62551	46.9	-9.1	ALL	SPEED	SUR	305	0	0	2.5	0.2	2.5
62697	57.5	-33.9	ALL	SPEED	SUR	279	87	31	3.5	-1.8	3.9
62803	55.1	-37.0	ALL	SPEED	SUR	911	4	0	2.9	-2.9	4.1
WIND DIRECTION											
41529	41.1	-44.9	ALL	DIRN.	SUR	240	0	0	26.9	-1.3	27.0
41530	37.3	-46.3	ALL	DIRN.	SUR	233	0	0	19.6	5.2	20.3
41611	13.2	-48.0	ALL	DIRN.	SUR	205	0	0	11.4	-0.4	11.4
41612	16.9	-54.3	ALL	DIRN.	SUR	221	0	0	11.5	0.1	11.5
41613	16.2	-53.0	ALL	DIRN.	SUR	208	0	0	11.0	6.4	12.7
41614	14.8	-59.5	ALL	DIRN.	SUR	148	0	0	13.2	9.0	16.0
42624	53.6	-42.4	ALL	DIRN.	SUR	109	1	1	36.1	23.4	43.0
44513	43.6	-40.6	ALL	DIRN.	SUR	243	0	0	29.2	13.9	32.3
44624	53.3	-41.1	ALL	DIRN.	SUR	375	4	1	31.7	26.7	41.4
44726	52.6	-31.6	ALL	DIRN.	SUR	609	5	1	40.9	4.7	41.2
44742	45.3	-36.0	ALL	DIRN.	SUR	208	0	0	31.3	-11.6	33.3
44762	40.2	-35.6	ALL	DIRN.	SUR	191	0	0	20.8	-5.4	21.5
44776	52.3	-32.0	ALL	DIRN.	SUR	21	0	0	134.8	-2.3	134.8
62518	42.8	-19.3	ALL	DIRN.	SUR	130	0	0	19.7	-6.3	20.7
62551	46.9	-9.1	ALL	DIRN.	SUR	275	0	0	25.1	2.3	25.2
62697	57.5	-33.9	ALL	DIRN.	SUR	252	87	35	119.5	94.8	152.6
62803	55.1	-37.0	ALL	DIRN.	SUR	780	4	1	33.1	6.7	33.7

TABLE 9

MONTHLY MONITORING OF AIRCRAFT OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Statistics for each airline carrier.
Area monitored		:40°N - 70°N, 60°W - 0°W.
Standard of comparison		:Background field from Bracknell global model.
Observation times		:All hours combined.
Level(s) monitored		:300.0 - 150.0 hPa
Elements monitored		:TEMP in °C ; WIND in m s^{-1}
Parameters monitored	:N REP.	:Number of observations received excluding duplicates.
	:PG	:Percentage of observations with gross errors.
	:PR	:Percentage of observations rejected by quality control including rejections from the duplicate check.
	:PC	:Percentage of observations with calm winds.
	:RMS	:Root Mean Square difference of observations from background values excluding those with gross errors in Temperature & vector wind.
	:BIAS	:Mean difference of observations from background values excluding those with gross errors in Temperature & vector wind.
GROSS ERROR LIMITS	:10.0 °C ; 60 m s^{-1} Vector Wind	
SELECTION CRITERIA	:N REP ≥ 20	

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
AAL	3706	0	2	1.9	0.1	3736	0	2	0	8.6	1.1
ACA	1288	0	2	1.9	-0.1	1331	0	2	0	7.9	0.9
AEA	408	1	100	2.7	0.6	404	1	5	0	9.4	1.4
AEL	722	0	4	2.2	-0.3	731	0	4	0	9.2	1.2
AEY	23	0	4	2.3	1.5	23	0	4	0	10.7	3.7
AFL	138	1	0	2.0	0.7	140	0	1	0	8.4	1.2
AFR	868	0	5	1.9	-0.2	895	0	6	0	8.7	1.3
AIH	151	1	4	2.0	-0.1	158	0	7	0	9.5	1.3
AJM	52	2	10	1.8	-0.8	51	0	8	0	10.5	0.8
AMX	142	1	7	2.3	-0.4	145	0	6	0	9.5	1.3
ANZ	229	0	1	2.0	-1.0	230	0	1	0	7.3	1.5
AOM	265	0	2	1.8	0.8	270	0	3	0	8.3	1.5
ARP	39	0	0	1.7	1.0	39	0	8	8	7.0	0.4
AUA	72	0	7	2.2	-0.3	74	0	4	0	8.7	0.1
AVA	100	2	6	2.4	-0.2	102	1	8	0	10.2	0.0
AZA	427	1	8	2.5	0.7	435	0	5	0	9.4	1.0
BAL	283	0	19	2.0	-0.3	292	0	20	0	9.7	0.2
BAW	1358	1	4	2.0	-0.1	1386	0	4	0	8.8	1.5
BBB	22	0	5	1.6	-0.6	23	0	13	4	11.1	3.8
BWA	108	1	100	2.7	1.5	109	0	9	0	11.6	0.8
CDN	387	0	2	1.6	0.0	393	0	2	0	7.2	1.3
CFG	673	0	3	2.1	-0.8	682	0	4	0	9.9	0.8
CKT	48	0	4	1.3	0.5	49	0	8	0	10.9	1.6
CLX	162	1	2	2.2	-1.0	164	0	1	0	7.8	1.7
CMM	23	0	0	1.5	0.5	22	0	0	0	6.6	1.6
COA	570	1	3	2.1	0.9	578	0	4	1	9.5	0.8
CRL	232	1	3	1.9	0.2	235	0	3	1	9.5	1.4
CSA	34	6	9	1.3	-0.3	34	0	3	0	7.1	0.5
CUB	203	1	100	2.1	1.3	202	0	70	0	11.2	2.0
DAL	2471	1	2	1.9	0.4	2498	0	2	0	9.0	1.3
DHL	340	6	100	4.8	-2.7	342	0	100	0	14.8	2.3
DLH	2403	0	9	2.0	0.3	2432	0	10	1	8.3	1.0
DOA	56	0	2	2.2	-1.0	57	0	2	0	10.7	3.2
ELY	175	1	16	2.7	0.7	182	0	10	0	9.1	-0.1
EWW	155	1	100	2.4	1.0	159	0	100	0	16.6	3.7
FDX	541	0	2	1.6	0.3	549	0	2	0	8.3	1.5
FIN	396	0	3	1.8	0.3	397	0	4	1	7.9	0.9
GAF	57	0	12	3.5	0.8	57	4	7	0	8.9	1.9
HLF	109	0	2	1.9	-1.0	109	2	4	0	9.0	2.1
HZM	29	0	0	1.9	0.4	30	0	7	0	12.1	2.2
IBE	1286	1	21	2.2	0.4	1287	0	22	0	10.1	1.3
ICE	660	1	2	1.8	0.1	655	0	2	0	8.3	0.9
JAL	28	0	0	2.0	-0.3	29	0	10	0	10.5	1.3
KLM	2137	0	2	1.9	0.2	2171	0	3	0	9.2	0.9
LDA	194	1	9	2.4	-1.2	197	0	11	1	9.6	0.9
LDI	265	1	28	2.4	-1.4	270	0	24	0	7.8	0.4
LIB	110	3	7	2.1	1.0	110	0	5	0	11.0	0.4
LKR	27	0	0	1.8	1.3	27	0	7	0	12.3	-1.0
LOT	339	1	1	2.3	-1.3	339	0	4	0	8.4	0.5
LTU	648	1	3	1.9	0.3	653	0	3	0	8.9	1.5
MPH	628	0	1	2.0	-0.6	643	0	3	0	8.5	0.9
NWA	2075	1	3	2.1	0.9	2131	0	4	0	9.1	0.9
PAC	27	0	0	1.6	0.3	28	0	0	0	7.6	2.4
RAM	26	0	4	3.2	-1.0	26	0	0	0	11.3	-0.7
RCH	238	2	100	3.4	0.2	236	0	100	0	12.3	2.7
RJA	56	0	7	2.5	1.1	57	0	4	0	7.3	1.1
ROT	20	0	5	2.3	-1.2	21	0	0	0	7.8	-0.2
RRR	57	2	18	2.4	0.3	57	0	18	0	8.4	-1.0
SAB	70	0	3	2.0	0.0	73	0	1	0	8.2	2.5

	TEMPERATURE					WIND					
IDENT.	N.REP.	PG	PR	RMS	BIAS	N.REP.	PG	PR	PC	RMS	BIAS
SAS	894	0	1	1.9	0.3	898	0	3	0	9.0	0.8
SEU	20	0	0	1.8	0.3	20	0	5	0	8.1	-0.3
SIA	66	0	5	2.3	-1.4	66	0	6	0	8.1	1.7
SLR	49	0	29	1.4	-0.3	51	0	29	0	8.9	1.2
SPP	41	0	15	2.3	-0.2	38	0	16	0	12.8	4.2
SVA	142	0	6	2.1	0.9	148	0	100	0	14.6	3.6
SWR	169	0	4	2.0	0.7	174	0	5	1	9.5	2.2
TAP	259	3	9	2.3	0.1	260	0	7	0	10.8	1.8
TEJ	63	2	22	1.8	0.6	64	2	19	0	9.2	-0.1
TOW	61	0	8	2.1	1.2	63	0	16	0	10.4	-0.4
TSC	24	0	0	2.0	1.3	23	0	0	0	6.5	0.5
TWA	1424	1	2	2.2	0.2	1413	0	3	0	9.7	1.2
TWE	24	0	0	2.5	-0.2	25	0	0	0	9.6	0.0
UAL	1848	0	2	2.1	-1.0	1870	0	2	0	7.7	1.0
ULE	140	0	2	2.0	0.2	141	0	1	0	10.1	1.1
UPS	468	1	18	2.0	0.3	472	0	20	0	9.3	1.3
USA	288	0	1	1.9	0.0	290	0	3	0	9.5	1.5
VIA	91	2	21	3.2	-0.1	93	0	16	0	9.7	1.8
VIR	149	0	3	1.9	-0.5	151	0	7	1	10.0	0.9
WOA	33	0	18	2.8	1.4	28	0	25	0	10.6	2.1
BA	7023	0	10	1.5	0.4	7021	0	25	0	8.3	1.6
IT	41	0	0	1.0	0.2	41	0	0	2	8.3	1.5
KL	2251	0	12	1.5	0.4	2249	0	11	0	7.4	1.1
LH	495	0	10	1.6	0.2	494	0	10	0	9.5	1.0
SV	73	0	11	1.1	0.5	73	0	11	0	6.6	0.3
N	251	1	6	3.2	0.8	262	0	8	0	11.1	0.2

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	100	2	0	18.5	21.8	11.5
DBBH	12	Z	100	6	0	13.1	28.5	25.3
DBLK	00	Z	100	1	0	0.0	35.0	35.0
EHOA	00	Z	100	1	0	0.0	40.0	40.0
EHOA	12	Z	100	9	0	45.7	71.1	54.4
EOGW	00	Z	100	20	0	17.5	17.7	2.5
EOGW	12	Z	100	20	0	14.5	20.5	14.5
FNOR	00	Z	100	9	0	16.7	21.3	13.2
FNOR	12	Z	100	9	0	18.2	19.7	7.6
FNOU	00	Z	100	9	0	16.7	32.9	28.3
FNOU	12	Z	100	9	0	9.9	17.7	14.7
FNPH	00	Z	100	11	0	19.6	19.6	1.2
FNPH	12	Z	100	10	0	16.5	16.6	-1.6
FNPL	00	Z	100	1	0	0.0	27.0	-27.0
FNRS	00	Z	100	12	0	13.2	14.9	6.8
FNRS	12	Z	100	11	0	13.2	14.5	5.9
FOU	00	Z	100	1	0	0.0	25.0	25.0
FZVN	00	Z	100	20	0	17.9	22.2	13.2
FZVN	12	Z	100	20	0	13.1	28.1	24.8
JCCX	00	Z	100	1	0	0.0	44.0	44.0
JDWX	00	Z	100	1	0	0.0	54.0	54.0
JIVB	00	Z	100	1	0	0.0	67.0	67.0
KCEJ	00	Z	100	8	0	45.0	45.1	3.1
KCEJ	12	Z	100	12	0	37.4	44.8	24.7
LDWR	00	Z	100	30	0	13.8	14.9	5.4
LDWR	12	Z	100	29	0	19.4	20.0	4.9
OXTS2	00	Z	100	2	0	11.0	24.6	22.0
OXTS2	12	Z	100	3	0	13.9	14.9	5.3
OXYH2	00	Z	100	20	0	26.2	27.7	-9.1
OXYH2	12	Z	100	21	0	22.4	23.2	-6.1
SHIPAF	00	Z	100	6	0	40.9	46.0	21.0
SHIPAF	12	Z	100	5	0	59.7	106.8	88.6
TFTA	00	Z	100	18	0	26.5	37.3	26.3
TFTA	12	Z	100	19	0	31.9	45.0	31.7
V2EZ	00	Z	100	11	0	44.9	48.5	18.4
V2EZ	12	Z	100	9	0	27.6	30.2	12.2
V2LV	00	Z	100	16	0	24.9	31.0	18.5
V2LV	12	Z	100	13	0	19.8	33.0	26.5
WTEU	00	Z	100	1	0	0.0	15.0	15.0
ZDLG	00	Z	100	1	0	0.0	67.0	-67.0
03953	00	Z	100	30	0	12.5	17.8	12.8
03953	12	Z	100	31	0	17.1	25.7	19.2
04018	00	Z	100	29	0	17.6	39.3	35.1
04018	12	Z	100	30	0	17.5	44.5	40.9
04220	00	Z	100	30	0	13.9	22.1	17.2
04220	12	Z	100	30	0	17.5	28.2	22.1
04270	00	Z	100	28	1	27.6	39.5	28.2
04270	12	Z	100	30	0	30.5	41.1	27.5
04339	00	Z	100	30	0	16.6	23.0	15.9
04339	12	Z	100	29	0	11.8	21.9	18.4
04360	00	Z	100	28	0	13.2	23.7	19.6
04360	12	Z	100	28	0	23.3	33.3	23.8
08001	00	Z	100	26	0	15.4	16.1	4.5
08001	12	Z	100	27	0	19.9	20.0	-2.0
08508	00	Z	100	28	1	18.0	25.3	17.8
08508	12	Z	100	31	0	17.8	29.7	23.7
08522	00	Z	100	29	0	14.7	18.2	10.8
08522	12	Z	100	30	0	17.7	23.6	15.6
60020	00	Z	100	28	0	16.8	21.3	13.1
60020	12	Z	100	30	0	19.6	22.4	10.8
71600	00	Z	100	29	0	18.9	34.4	28.8

TABLE 10

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	100	2	0	18.5	21.8	11.5
DBBH	12	Z	100	6	0	13.1	28.5	25.3
DBLK	00	Z	100	1	0	0.0	35.0	35.0
EHOA	00	Z	100	1	0	0.0	40.0	40.0
EHOA	12	Z	100	9	0	45.7	71.1	54.4
EOGW	00	Z	100	20	0	17.5	17.7	2.5
EOGW	12	Z	100	20	0	14.5	20.5	14.5
FNOR	00	Z	100	9	0	16.7	21.3	13.2
FNOR	12	Z	100	9	0	18.2	19.7	7.6
FNOU	00	Z	100	9	0	16.7	32.9	28.3
FNOU	12	Z	100	9	0	9.9	17.7	14.7
FNPH	00	Z	100	11	0	19.6	19.6	1.2
FNPH	12	Z	100	10	0	16.5	16.6	-1.6
FNPL	00	Z	100	1	0	0.0	27.0	-27.0
FNRS	00	Z	100	12	0	13.2	14.9	6.8
FNRS	12	Z	100	11	0	13.2	14.5	5.9
FOU	00	Z	100	1	0	0.0	25.0	25.0
FZVN	00	Z	100	20	0	17.9	22.2	13.2
FZVN	12	Z	100	20	0	13.1	28.1	24.8
JCCX	00	Z	100	1	0	0.0	44.0	44.0
JDWX	00	Z	100	1	0	0.0	54.0	54.0
JIVB	00	Z	100	1	0	0.0	67.0	67.0
KCEJ	00	Z	100	8	0	45.0	45.1	3.1
KCEJ	12	Z	100	12	0	37.4	44.8	24.7
LDWR	00	Z	100	30	0	13.8	14.9	5.4
LDWR	12	Z	100	29	0	19.4	20.0	4.9
OXTS2	00	Z	100	2	0	11.0	24.6	22.0
OXTS2	12	Z	100	3	0	13.9	14.9	5.3
OXYH2	00	Z	100	20	0	26.2	27.7	-9.1
OXYH2	12	Z	100	21	0	22.4	23.2	-6.1
SHIPAF	00	Z	100	6	0	40.9	46.0	21.0
SHIPAF	12	Z	100	5	0	59.7	106.8	88.6
TFTA	00	Z	100	18	0	26.5	37.3	26.3
TFTA	12	Z	100	19	0	31.9	45.0	31.7
V2EZ	00	Z	100	11	0	44.9	48.5	18.4
V2EZ	12	Z	100	9	0	27.6	30.2	12.2
V2LV	00	Z	100	16	0	24.9	31.0	18.5
V2LV	12	Z	100	13	0	19.8	33.0	26.5
WTEU	00	Z	100	1	0	0.0	15.0	15.0
ZDLG	00	Z	100	1	0	0.0	67.0	-67.0
03953	00	Z	100	30	0	12.5	17.8	12.8
03953	12	Z	100	31	0	17.1	25.7	19.2
04018	00	Z	100	29	0	17.6	39.3	35.1
04018	12	Z	100	30	0	17.5	44.5	40.9
04220	00	Z	100	30	0	13.9	22.1	17.2
04220	12	Z	100	30	0	17.5	28.2	22.1
04270	00	Z	100	28	1	27.6	39.5	28.2
04270	12	Z	100	30	0	30.5	41.1	27.5
04339	00	Z	100	30	0	16.6	23.0	15.9
04339	12	Z	100	29	0	11.8	21.9	18.4
04360	00	Z	100	28	0	13.2	23.7	19.6
04360	12	Z	100	28	0	23.3	33.3	23.8
08001	00	Z	100	26	0	15.4	16.1	4.5
08001	12	Z	100	27	0	19.9	20.0	-2.0
08508	00	Z	100	28	1	18.0	25.3	17.8
08508	12	Z	100	31	0	17.8	29.7	23.7
08522	00	Z	100	29	0	14.7	18.2	10.8
08522	12	Z	100	30	0	17.7	23.6	15.6
60020	00	Z	100	28	0	16.8	21.3	13.1
60020	12	Z	100	30	0	19.6	22.4	10.8
71600	00	Z	100	29	0	18.9	34.4	28.8

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
71600	12	Z	100	31	0	20.8	28.6	19.5
72201	00	Z	100	24	0	29.8	46.1	35.2
72201	12	Z	100	28	0	28.6	39.0	26.5
72402	00	Z	100	28	0	16.4	26.6	20.9
72402	12	Z	100	26	0	25.6	28.5	12.4
74494	00	Z	100	21	0	22.7	23.9	7.4
74494	12	Z	100	21	0	31.1	32.6	9.8
78016	00	Z	100	26	0	10.8	21.3	18.3
78016	12	Z	100	28	0	12.9	18.0	12.6

TABLE 11

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures:

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:500 hPa.
Element monitored		:GEOPOTENTIAL HEIGHT in metres
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:SD	:SD of difference of observations from background values at level shown excluding those with gross errors.
	:BIAS	:Mean difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.1

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
DBBH	00	Z	500	2	0	5.0	19.6	19.0
DBBH	12	Z	500	7	0	5.4	13.8	12.7
DBLK	00	Z	500	1	0	0.0	4.0	4.0
EHOA	00	Z	500	1	0	0.0	22.0	22.0
EHOA	12	Z	500	9	1	47.8	72.9	55.0
EOGW	00	Z	500	13	0	12.6	15.5	9.1
EOGW	12	Z	500	13	0	9.8	10.1	2.3
FNH	00	Z	500	1	0	0.0	12.0	-12.0
FNOR	00	Z	500	9	0	9.8	18.5	15.7
FNOR	12	Z	500	9	0	7.7	11.9	9.1
FNOU	00	Z	500	9	0	12.2	19.3	14.9
FNOU	12	Z	500	9	0	11.6	18.4	14.2
FNPH	00	Z	500	13	0	8.4	8.6	2.0
FNPH	12	Z	500	12	0	14.8	15.5	-4.8
FNPL	00	Z	500	1	0	0.0	33.0	-33.0
FNRS	00	Z	500	13	0	18.2	19.3	6.2
FNRS	12	Z	500	12	0	9.6	13.8	9.9
FOU	00	Z	500	1	0	0.0	4.0	4.0
FZVN	00	Z	500	20	0	14.0	17.2	9.9
FZVN	12	Z	500	19	1	11.5	15.0	9.6
JCCX	00	Z	500	1	0	0.0	4.0	4.0
JDWX	00	Z	500	1	0	0.0	18.0	18.0
JIVB	00	Z	500	1	0	0.0	19.0	19.0
KCEJ	00	Z	500	13	0	12.9	14.7	7.2
KCEJ	12	Z	500	12	0	25.6	26.2	-5.3
LDWR	00	Z	500	30	0	18.0	19.7	7.9
LDWR	12	Z	500	29	0	21.6	22.1	4.6
OXTS2	00	Z	500	2	0	11.5	18.5	14.5
OXTS2	12	Z	500	3	0	3.3	3.4	0.7
OXYH2	00	Z	500	21	0	17.2	17.2	-0.8
OXYH2	12	Z	500	22	0	19.1	22.0	-10.8
SHIPAF	00	Z	500	7	0	10.8	23.3	20.6
SHIPAF	12	Z	500	5	0	22.8	40.1	33.0
TFTA	00	Z	500	18	0	35.2	42.5	23.8
TFTA	12	Z	500	17	0	35.6	43.3	24.8
V2EZ	00	Z	500	11	0	37.3	42.9	21.1
V2EZ	12	Z	500	10	0	23.8	23.8	-0.1
V2LV	00	Z	500	17	0	17.2	22.3	14.2
V2LV	12	Z	500	13	0	14.5	26.6	22.3
WTEU	00	Z	500	1	0	0.0	18.0	18.0
ZDLG	00	Z	500	1	0	0.0	15.0	-15.0
03953	00	Z	500	30	0	9.5	18.8	16.2
03953	12	Z	500	31	0	10.1	17.0	13.7
04018	00	Z	500	29	0	11.8	27.1	24.4
04018	12	Z	500	31	0	10.1	25.2	23.1
04220	00	Z	500	30	0	14.6	16.0	6.7
04220	12	Z	500	29	0	11.4	12.6	5.4
04270	00	Z	500	29	0	21.6	29.4	19.9
04270	12	Z	500	31	0	18.8	25.1	16.7
04339	00	Z	500	30	0	17.7	18.8	6.5
04339	12	Z	500	30	0	13.6	16.0	8.5
04360	00	Z	500	28	0	12.5	19.1	14.5
04360	12	Z	500	28	0	14.0	19.4	13.5
08001	00	Z	500	27	0	16.5	17.3	5.4
08001	12	Z	500	30	0	17.4	18.1	-4.9
08508	00	Z	500	29	0	15.2	23.9	18.4
08508	12	Z	500	31	0	15.9	22.7	16.2
08522	00	Z	500	29	0	11.3	19.5	15.9
08522	12	Z	500	30	0	13.6	17.5	11.0
60020	00	Z	500	30	0	11.7	25.7	22.8
60020	12	Z	500	30	0	20.0	26.8	17.8

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	SD	RMS	BIAS
71600	00	Z	500	29	0	16.7	20.0	11.1
71600	12	Z	500	31	0	13.5	16.4	9.3
72201	00	Z	500	25	0	8.6	16.9	14.6
72201	12	Z	500	29	1	7.3	9.2	5.6
72402	00	Z	500	29	0	9.4	15.4	12.2
72402	12	Z	500	28	0	12.7	13.9	5.6
74494	00	Z	500	28	0	18.0	19.4	7.2
74494	12	Z	500	29	0	29.4	30.9	9.4
78016	00	Z	500	25	0	8.5	10.5	6.1
78016	12	Z	500	29	0	6.9	9.4	6.4

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	100	2	0	0	0.0	3.3	-0.4
DBBH	12	V	100	6	0	0	0.0	-3.9	-0.3
DBLK	00	V	100	1	0	0	0.0	-2.4	-1.0
EHOA	00	V	100	1	0	0	5.2	-6.1	2.0
EHOA	12	V	100	9	0	77	5.2	-22.1	0.2
EOGW	00	V	100	13	0	0	5.2	1.5	1.6
EOGW	12	V	100	14	0	0	7.0	-1.3	-1.3
FNOR	00	V	100	9	0	0	4.8	-1.1	1.8
FNOR	12	V	100	9	0	0	4.8	-1.7	-0.7
FNOU	00	V	100	9	0	0	4.8	-2.2	0.7
FNOU	12	V	100	10	0	0	4.8	-2.9	1.7
FNPH	00	V	100	11	0	0	3.9	-0.4	-2.9
FNPH	12	V	100	10	0	0	3.4	-6.1	1.1
FNPL	00	V	100	1	0	0	4.9	-1.2	5.8
FNRS	00	V	100	12	0	0	4.9	-1.2	1.4
FNRS	12	V	100	11	0	0	3.5	-1.2	-0.8
FOU	00	V	100	1	0	0	4.9	0.7	-0.4
FZVN	00	V	100	16	0	0	4.9	1.9	-0.7
FZVN	12	V	100	15	0	0	3.8	1.1	0.3
JDWX	00	V	100	1	0	0	5.5	3.7	2.5
JIVB	00	V	100	1	0	0	5.5	-0.8	-0.2
KCEJ	00	V	100	8	0	0	5.5	-0.2	0.4
KCEJ	12	V	100	12	0	0	5.5	-2.4	-0.5
LDWR	00	V	100	30	0	0	4.0	-0.6	-1.1
LDWR	12	V	100	30	0	0	2.4	-0.9	-2.0
OXTS2	00	V	100	1	0	0	1.7	-0.1	1.4
OXTS2	12	V	100	3	0	0	1.7	3.0	0.1
OXYH2	00	V	100	19	0	0	1.7	-0.1	-0.1
OXYH2	12	V	100	21	0	0	3.6	-2.5	-0.2
SHIPAF	00	V	100	3	0	0	3.7	3.0	-0.1
SHIPAF	12	V	100	3	0	0	3.7	0.8	-1.6
TFTA	00	V	100	14	0	0	3.7	1.7	-0.2
TFTA	12	V	100	17	0	0	2.9	0.8	-0.4
V2EZ	00	V	100	11	0	9	3.4	-1.5	-0.6
V2EZ	12	V	100	9	0	0	4.2	0.9	0.5
V2LV	00	V	100	16	0	0	4.2	0.0	0.2
V2LV	12	V	100	12	0	0	1.9	-1.1	-0.4
WTEU	00	V	100	1	0	0	2.0	-1.2	2.8
ZDLG	00	V	100	1	0	100	2.0	7.0	-18.1
03953	00	V	100	30	0	0	2.3	0.0	-0.5
03953	12	V	100	31	0	0	3.2	-0.6	-0.2
04018	00	V	100	29	0	0	2.3	0.2	-1.7
04018	12	V	100	30	0	0	2.7	-0.7	-0.7
04220	00	V	100	30	0	0	1.8	1.0	1.1
04220	12	V	100	30	0	0	2.9	-0.1	1.3
04270	00	V	100	28	0	0	3.1	-0.2	2.0
04270	12	V	100	27	0	0	5.8	-1.7	2.0
04339	00	V	100	30	0	0	3.9	0.5	-1.4
04339	12	V	100	28	0	0	3.5	-0.2	-0.5
04360	00	V	100	28	0	0	3.6	-0.1	0.8
04360	12	V	100	27	0	0	3.8	-0.5	-1.9
08001	00	V	100	21	0	0	3.4	0.2	-0.5
08001	12	V	100	26	0	0	2.6	-1.4	0.2
08508	00	V	100	29	0	0	3.6	0.6	0.5
08508	12	V	100	31	0	0	4.1	-2.2	-0.4
08522	00	V	100	29	0	0	3.5	1.2	0.1
08522	12	V	100	28	0	0	3.3	-1.2	0.0
60020	00	V	100	28	0	0	4.2	0.1	0.4
60020	12	V	100	28	0	0	2.9	-2.8	0.7
71600	00	V	100	29	0	0	4.8	0.3	1.1
71600	12	V	100	31	0	0	3.8	-1.1	1.3

TABLE 12

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period		:One calendar month.
Data monitored		:Reports from each unique identifier for radiosonde TEMPs.
Area monitored		:0°N - 90°N, 100°W - 40°E
Standard of comparison		:Background field from Bracknell global model.
Position		:Average latitude and longitude for period.
Observation times		:00, 12 UTC.
Level monitored		:100 hPa.
Element monitored		:VECTOR WIND in m s^{-1}
Parameters monitored	:NUM OBS	:Number of observations available at level shown during period.
	:NUM GROSS	:Number of gross errors at level shown during period.
	:% REJ	:Percentage of observations rejected by quality control at level shown during period.
	:UBIAS,VBIAS	:Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.
	:RMS	:Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	100	2	0	0	0.0	3.3	-0.4
DBBH	12	V	100	6	0	0	0.0	-3.9	-0.3
DBLK	00	V	100	1	0	0	0.0	-2.4	-1.0
EHOA	00	V	100	1	0	0	5.2	-6.1	2.0
EHOA	12	V	100	9	0	77	5.2	-22.1	0.2
EOGW	00	V	100	13	0	0	5.2	1.5	1.6
EOGW	12	V	100	14	0	0	7.0	-1.3	-1.3
FNOR	00	V	100	9	0	0	4.8	-1.1	1.8
FNOR	12	V	100	9	0	0	4.8	-1.7	-0.7
FNOU	00	V	100	9	0	0	4.8	-2.2	0.7
FNOU	12	V	100	10	0	0	4.8	-2.9	1.7
FNPH	00	V	100	11	0	0	3.9	-0.4	-2.9
FNPH	12	V	100	10	0	0	3.4	-6.1	1.1
FNPL	00	V	100	1	0	0	4.9	-1.2	5.8
FNRS	00	V	100	12	0	0	4.9	-1.2	1.4
FNRS	12	V	100	11	0	0	3.5	-1.2	-0.8
FOU	00	V	100	1	0	0	4.9	0.7	-0.4
FZVN	00	V	100	16	0	0	4.9	1.9	-0.7
FZVN	12	V	100	15	0	0	3.8	1.1	0.3
JDWX	00	V	100	1	0	0	5.5	3.7	2.5
JIVB	00	V	100	1	0	0	5.5	-0.8	-0.2
KCEJ	00	V	100	8	0	0	5.5	-0.2	0.4
KCEJ	12	V	100	12	0	0	5.5	-2.4	-0.5
LDWR	00	V	100	30	0	0	4.0	-0.6	-1.1
LDWR	12	V	100	30	0	0	2.4	-0.9	-2.0
OXTS2	00	V	100	1	0	0	1.7	-0.1	1.4
OXTS2	12	V	100	3	0	0	1.7	3.0	0.1
OXYH2	00	V	100	19	0	0	1.7	-0.1	-0.1
OXYH2	12	V	100	21	0	0	3.6	-2.5	-0.2
SHIPAF	00	V	100	3	0	0	3.7	3.0	-0.1
SHIPAF	12	V	100	3	0	0	3.7	0.8	-1.6
TFTA	00	V	100	14	0	0	3.7	1.7	-0.2
TFTA	12	V	100	17	0	0	2.9	0.8	-0.4
V2EZ	00	V	100	11	0	9	3.4	-1.5	-0.6
V2EZ	12	V	100	9	0	0	4.2	0.9	0.5
V2LV	00	V	100	16	0	0	4.2	0.0	0.2
V2LV	12	V	100	12	0	0	1.9	-1.1	-0.4
WTEU	00	V	100	1	0	0	2.0	-1.2	2.8
ZDLG	00	V	100	1	0	100	2.0	7.0	-18.1
03953	00	V	100	30	0	0	2.3	0.0	-0.5
03953	12	V	100	31	0	0	3.2	-0.6	-0.2
04018	00	V	100	29	0	0	2.3	0.2	-1.7
04018	12	V	100	30	0	0	2.7	-0.7	-0.7
04220	00	V	100	30	0	0	1.8	1.0	1.1
04220	12	V	100	30	0	0	2.9	-0.1	1.3
04270	00	V	100	28	0	0	3.1	-0.2	2.0
04270	12	V	100	27	0	0	5.8	-1.7	2.0
04339	00	V	100	30	0	0	3.9	0.5	-1.4
04339	12	V	100	28	0	0	3.5	-0.2	-0.5
04360	00	V	100	28	0	0	3.6	-0.1	0.8
04360	12	V	100	27	0	0	3.8	-0.5	-1.9
08001	00	V	100	21	0	0	3.4	0.2	-0.5
08001	12	V	100	26	0	0	2.6	-1.4	0.2
08508	00	V	100	29	0	0	3.6	0.6	0.5
08508	12	V	100	31	0	0	4.1	-2.2	-0.4
08522	00	V	100	29	0	0	3.5	1.2	0.1
08522	12	V	100	28	0	0	3.3	-1.2	0.0
60020	00	V	100	28	0	0	4.2	0.1	0.4
60020	12	V	100	28	0	0	2.9	-2.8	0.7
71600	00	V	100	29	0	0	4.8	0.3	1.1
71600	12	V	100	31	0	0	3.8	-1.1	1.3

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
72201	12	V	100	28	0	0	4.3	-1.8	-0.5
72201	00	V	100	24	0	0	3.0	-0.7	-0.8
72402	00	V	100	26	0	0	5.2	0.5	-1.1
72402	12	V	100	25	0	0	6.2	0.6	0.3
74494	00	V	100	18	0	0	5.1	-2.1	1.1
74494	12	V	100	17	0	0	4.1	-1.3	0.7
78016	00	V	100	25	0	0	4.1	-0.6	1.0
78016	12	V	100	28	0	0	3.7	-1.7	0.3

TABLE 13

MONTHLY MONITORING OF RADIOSONDE OBSERVATIONS (COSNA)
MONITORING CENTRE: BRACKNELL
MONTH: January, 1997

Monitoring procedures

Period :One calendar month.

Data monitored :Reports from each unique identifier for radiosonde TEMPs.

Area monitored :0°N - 90°N, 100°W - 40°E

Standard of comparison :Background field from Bracknell global model.

Position :Average latitude and longitude for period.

Observation times :00, 12 UTC.

Level monitored :500 hPa.

Element monitored :VECTOR WIND in m s^{-1}

Parameters monitored :NUM OBS :Number of observations available at level shown during period.

:NUM GROSS :Number of gross errors at level shown during period.

:% REJ :Percentage of observations rejected by quality control at level shown during period.

:UBIAS,VBIAS: Mean difference of observations of U and V components from background values at level shown excluding those with gross errors.

:RMS :Root Mean Square difference of observations from background values at level shown excluding those with gross errors.

GROSS ERROR LIMITS :Defined in Appendix I.2

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
DBBH	00	V	500	2	0	0	0.0	2.0	-0.9
DBBH	12	V	500	7	0	0	0.0	-2.2	-1.0
DBLK	00	V	500	1	0	0	0.0	-2.8	1.5
EHOA	00	V	500	1	0	0	5.2	0.2	2.9
EHOA	12	V	500	10	0	40	5.2	-11.3	0.7
EOGW	00	V	500	10	0	0	11.8	1.3	2.7
EOGW	12	V	500	11	0	0	5.7	0.5	-0.2
FNH	00	V	500	1	0	0	3.9	6.7	-5.2
FNOR	00	V	500	9	0	0	3.9	-0.1	0.0
FNOR	12	V	500	9	0	0	3.9	-0.2	-1.0
FNOU	00	V	500	9	0	11	3.9	-2.8	-1.5
FNOU	12	V	500	9	0	0	3.9	-2.4	-1.3
FNPH	00	V	500	13	0	0	3.9	-0.1	-1.0
FNPH	12	V	500	12	0	0	2.4	-6.0	0.6
FNPL	00	V	500	1	0	0	5.7	-3.3	1.0
FNRS	00	V	500	13	0	0	5.7	-0.6	-1.8
FNRS	12	V	500	12	0	8	4.3	0.3	-2.1
FOU	00	V	500	1	0	0	6.0	-0.1	-3.8
FZVN	00	V	500	14	0	0	6.0	1.1	0.5
FZVN	12	V	500	13	0	7	7.8	-4.5	0.2
JCCX	00	V	500	1	0	0	4.2	-3.0	-0.1
JDWX	00	V	500	1	0	0	4.2	-2.4	-2.0
JIVB	00	V	500	1	0	0	4.2	0.0	-2.1
KCEJ	00	V	500	11	0	0	4.2	0.1	1.0
KCEJ	12	V	500	12	0	8	5.7	-1.7	2.4
LDWR	00	V	500	30	0	0	10.7	0.9	-0.1
LDWR	12	V	500	29	0	0	3.9	0.6	0.7
OXTS2	00	V	500	2	0	0	4.2	0.5	-0.7
OXTS2	12	V	500	3	0	0	4.2	-4.5	-1.5
OXYH2	00	V	500	20	0	5	4.2	-1.2	-1.6
OXYH2	12	V	500	22	0	0	5.0	-0.7	1.6
SHIPAF	00	V	500	6	0	0	4.1	2.1	-1.1
SHIPAF	12	V	500	5	0	0	4.1	4.1	-3.2
TFTA	00	V	500	15	0	0	4.1	-1.0	-0.7
TFTA	12	V	500	14	0	0	3.6	-1.0	-0.6
V2EZ	00	V	500	11	0	0	6.2	-1.3	1.0
V2EZ	12	V	500	9	0	0	5.9	-0.1	3.2
V2LV	00	V	500	17	0	0	5.9	-0.7	0.1
V2LV	12	V	500	13	0	0	2.9	-1.5	-0.1
WTEU	00	V	500	1	0	0	2.4	-0.7	2.6
ZDLG	00	V	500	1	0	100	2.4	10.1	-18.8
03953	00	V	500	30	0	0	2.5	0.5	-1.7
03953	12	V	500	31	0	0	3.3	-0.7	-0.8
04018	00	V	500	28	0	0	2.8	3.3	-1.2
04018	12	V	500	30	0	0	3.2	1.5	-0.4
04220	00	V	500	30	0	0	3.9	1.1	0.0
04220	12	V	500	29	0	0	3.4	1.0	0.4
04270	00	V	500	29	0	0	3.6	0.4	1.3
04270	12	V	500	29	0	0	4.3	0.7	1.0
04339	00	V	500	30	0	0	5.8	1.4	0.9
04339	12	V	500	30	0	0	4.8	0.0	-0.2
04360	00	V	500	28	0	0	2.4	1.4	0.4
04360	12	V	500	28	0	0	3.6	0.6	-0.1
08001	00	V	500	27	0	0	3.9	-1.2	-1.0
08001	12	V	500	29	0	0	3.7	-0.6	-2.0
08508	00	V	500	29	0	0	2.7	-0.6	-1.0
08508	12	V	500	31	0	0	3.9	-1.0	-0.5
08522	00	V	500	28	0	0	3.7	0.3	-0.3
08522	12	V	500	29	0	0	2.6	-1.0	-0.8
60020	00	V	500	29	0	0	2.7	-1.2	-0.6
60020	12	V	500	28	0	0	3.5	-2.2	-0.5

WMO IDENT	OBS TIME	ELM	LEV	NUM OBS	NUM GROSS	% REJ	RMS	UBIAS	VBIAS
71600	00	V	500	29	0	0	4.1	1.2	1.1
71600	12	V	500	31	0	0	5.0	-0.5	0.5
72201	00	V	500	25	0	0	4.2	1.1	0.1
72201	12	V	500	30	0	0	2.9	0.5	-0.9
72402	00	V	500	29	0	0	3.7	-0.1	-0.3
72402	12	V	500	28	0	0	3.1	0.6	1.5
74494	00	V	500	28	0	0	2.9	-0.3	0.8
74494	12	V	500	29	0	0	3.5	-1.0	0.7
78016	00	V	500	24	0	0	5.6	0.4	1.5
78016	12	V	500	29	0	0	3.1	-1.0	0.7

APPENDIX I

1. The gross error limits for observation minus background differences of geopotential height in Tables 5, 10 and 11 are:-

Level (hPa)	Geopotential height (metres)
1000	100
850	100
700	100
500	150
400	175
300	200
250	225
200	250
150	275
100	300
70	375
50	400
30	450

The weighted RMS values used in Table 5,10 and 11 are calculated using the following weights:-

Level (hPa)	Weight
1000	3.70
850	3.40
700	2.90
500	2.20
400	1.90
300	1.60
250	1.50
200	1.37
150	1.19
100	1.00
70	0.87
50	0.80
30	0.64

2. The gross error limits for observation minus background differences of windspeed in Tables 6,12 and 13 are:-

Level (hPa)	Windspeed m s^{-1}
1000	35
850	35
700	40
500	45
400	50
300	60
250	60
200	50
150	50
100	45